THE LANCET.

A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology, Chemistry, Pharmacology, Public Health, and News.

TELEGRAPHIC ADDRESS—
LANCET, LONDON

[ONE HUNDRED AND SIXTY PAGES.]

TELEPHONE NUMBER—
5356 GERRARD

No. XVIII. of Vol. II., 1908.
No. 4444. Vol. CLXXV.

LONDON, SATURDAY, OCTOBER 31, 1908.

PRICE 7d.; POST FREE, 7½d.
[Pp. 120+40.

ROYAL SOCIETY OF MEDICINE.
SECTIONS: Clinical, Dermatological, Electro-therapeutical, Epidemiological, Laryngological, Medical, Neurological, Obstetrical and Gynæcological, Odontological, Otological, Pathological, Surgical, Therapeutical and Pharmacological, Anæsthetics, Disease in Children.
DIARY of MEETINGS on page 1348.

IMPORTANT NEW BOOKS.
See J. & A. CHURCHILL'S
Pages 6 and 7.

Now Ready. Volume XXVIII. With 16 Plates and 45 Text-Figures. 12s. 6d. net.
Also published in Three separate Fasciculi at 4s. net each.
THE TRANSACTIONS of the OPHTHALMOLOGICAL SOCIETY of the United Kingdom.
Session 1907-1908.
With Lists of Officers, Members, &c.
London: J. & A. Churchill, 7, Great Marlborough-street.

READY SHORTLY.
SQUIRE'S COMPANION
(EIGHTEENTH EDITION)
1864—1908.
J. & A. Churchill, 7, Great Marlborough-street, London, W.
For further particulars see page 31.

THE CURE OF THE MORPHIA HABIT WITHOUT SUFFERING.
By OSCAR JENNINGS, M.D. Paris, M.R.C.S. Eng.
London: Baillière, Tindall & Cox. Second Edition, price 3s. 6d. net.

Pp. viii. + 182. Illustrated. Price 6s. net.
GASTRIC SURGERY.
By HERBERT J. PATERSON, M.A., M.B., B.C.Cantab., F.R.C.S., Hunterian Professor of Surgery, Royal College of Surgeons.
Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden, W.C.

BY C. MANSELL MOULLIN, M.D. Oxon., F.R.C.S., Senior Surgeon to the London Hospital; late Examiner in Surgery at the Universities of Oxford and Cambridge.
ENLARGEMENT of the PROSTATE. Third Edition. Price 6s.
INFLAMMATION of the BLADDER and URINARY FEVER. Price 5s.
London: H. K. Lewis, 136, Gower-street.

WHEN to OPERATE in INFLAMMATION of the APPENDIX. Third Edition now ready. Price 2s. 6d.
THE SURGICAL TREATMENT of GASTRIC ULCER. Price 2s. 6d.
London: J. Bale & Danielsson, Ltd., 83-89, Gt. Titchfield-street.

Price 2s. 6d. net.
MOUTH-BREATHING and its RELATION to DISEASES of the THROAT, NOSE, EAR, and ACCESSORY CAVITIES.
By MAYO COLLIER, M.S.Lond., F.R.C.S.Eng., Senior Surgeon to the North-West London Hospital; late President of the British Laryngological, Rhinological, and Otological Association.
By SAME AUTHOR. Price 2s. net.
CHRONIC PROGRESSIVE DEAFNESS: Its Causation and Treatment.
London: Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden.

Just Published.
DR. HARRY CAMPBELL'S ON TREATMENT.
5s. net.
THE LANCET.—"It is quite refreshing to find such original ideas on a subject so widely written upon as therapeutics. ..... There is a quality about Dr. Campbell's writing that is very attractive. ..... We believe it will obtain a popularity which it thoroughly deserves."
BRITISH MEDICAL JOURNAL.—"No medical man will read it without a feeling of refreshment and real gain ..... abounds in that higher power of common sense which may properly be called wisdom."
BRITISH JOURNAL OF TUBERCULOSIS.—"It consists of a series of essays interesting in subject, graceful in form, and often marked by a piquant humour. Practitioners of all ages will find abundant material for serious contemplation and no little of practical service in these most attractive pages."
BRISTOL MEDICO-CHIRURGICAL JOURNAL.—"The book is full of sound teaching and is so interesting that it may well take precedence over the popular novel of the day."
Baillière, Tindall & Cox.

THERAPEUTICS of the CIRCULATION.
EIGHT LECTURES delivered in the Spring of 1905 in the Physiological Laboratory of the University of London.
By SIR LAUDER BRUNTON, BART., M.D., D.Sc., LL.D.(Edin.), LL.D.(Aberd.), F.R.C.P., F.R.S., Consulting Physician to St. Bartholomew's Hospital.
Published under the auspices of the University of London.
Demy 8vo. 7s. 6d. net.
John Murray, Albemarle Street, W.

SAUNDERS' PRACTICAL MANUALS.
A HANDSOME AND PRACTICAL
REFERENCE LIBRARY AT A LOW COST.
See Saunders' Advertisement on Page 3.

THE CAUSE AND PREVENTION OF DENTAL CARIES.
By J. SIM WALLACE, D.Sc., M.D., L.D.S.
2s. 6d. net. Baillière, Tindall & Cox, Covent Garden, W.C.

By W. McADAM ECCLES, M.S., F.R.C.S.
HERNIA. Third Edition, 1908. Price 7/6 net.
121 Plates and other Illustrations.
THE IMPERFECTLY DESCENDED TESTIS.
Embodying the JACKSONIAN PRIZE ESSAY. Price 7s. 6d. net.
41 Plates and 76 Figures.
London: Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden.

UTERINE FIBROIDS.
By BEDFORD FENWICK, M.D., Gynæcologist to The Hospital for Women, Soho-square; formerly Senior Assistant Physician to the City of London Hospital for Diseases of the Chest.
"Dr. Fenwick's results are remarkably good."—THE LANCET.
Price 3s. 6d. post free.
By the same Author.
COMMON COMPLAINTS of WOMEN.
"Eminently practical."—THE MEDICAL TIMES.
3s. 6d. post free.
E. H. Blakeley, 11, Adam-street, Strand, London, W.C.

THE FOOD FACTOR in DISEASE. Including the Pathology and Treatment of Bilious Attacks, the Paroxysmal Neuroses (Migraine, Asthma, Angina Pectoris, &c.), Gout, High Blood-pressure, &c. By FRANCIS HARE, M.D., Consulting Physician, Brisbane Hospital. For abstract see THE LANCET review—Feb. 17th, 1906, pp. 453 to 456.—Longmans, Green & Co. In two volumes. Price 30s. net.

Works by GEORGE HERSCHELL, M.D.Lond.
Third Edition. Demy 8vo. Price 5s. net. By post 5s. 4d.
INDIGESTION: The Diagnosis and TREATMENT OF THE FUNCTIONAL DERANGEMENTS OF THE STOMACH.
Just Published. Second Edition. Demy 8vo. Price 1s. 6d. net. By post 1s. 9d.
THE DIAGNOSIS OF CANCER OF THE STOMACH. With Special Reference to its Recognition in an Early Stage.
H. J. Glaisher, 57, Wigmore-street, W.

By W. ARBUTHNOT LANE, M.S.
OPERATIVE TREATMENT of FRACTURES
Demy 4to. 7s. 6d.
THE OPERATIVE TREATMENT of CHRONIC CONSTIPATION.
Uniform with above. 2s. 6d.
CLEFT PALATE and HARE LIP.
Uniform with above. 5s.
The Medical Publishing Company, Ltd., 22½, Bartholomew Close, E.C.

LIBRARY OF CONGRESS 10 1908 PERIODICAL

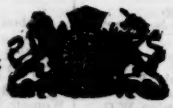
XMAS OFFER

to the Medical Profession. 10/- worth of finest Toilet Soaps for 5/-. On receipt of Professional Card and Postal Order for 5/- we will send the following, carriage paid, in the U.K. :—

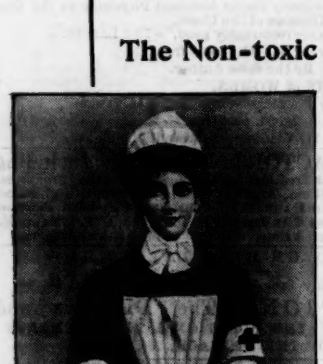
HANDSOME BOX containing two 1/- tablets of "Savon de Luxe Exclusif" (White Lilac Perfume), the most luxurious Soap made, and a 1/- bottle of White Lilac Perfume	3 0
HANDSOME CASKET containing 2 tablets of "Rivera" Élite Toilet Soap, and a 1/- bottle of "Rivera" Perfume	2 0
"RIVERA VIOLETS" Toilet Soap, wrapped, in box containing 3 tablets	1 0
SOAP "BISCUIT," for cleansing Artificial Dentures	0 9
"ROYALIST" Tooth Powder, in dainty Tin	0 4
HANDSOME BOX containing a stick of "Solace," the Antiseptic Solidified Shaving Cream	1 0
BOX containing 3 tablets of "Season's Greetings" Soap	0 8
Metal Box containing large tablet of "Lasso" with Pocket Mirror	0 6
Packing and Postage	0 9
	10 0

This Offer remains open to the 12th DECEMBER, 1908.

EDWARD COOK & CO., LTD., The Soap Specialists, LONDON, E.

By Appointment  **to H.M. the King.**

The Non-toxic Cyllin Bactericide.



(Medical)

Has a guaranteed Rideal-Walker Co-efficient of 20.0. It is therefore equal to Perchloride of Mercury as a bactericide. *(Vide "The Medical Press," Feb. 14, 1906.)*

N.B.—It has been found necessary to substitute the term "Rideal-Walker Co-efficient" for that originally introduced by the authors, viz., "Carbolic Acid Co-efficient," owing to the abuse of the latter on the part of unscrupulous manufacturers and vendors.—*Vide British Medical Journal*, April 6th, 1907.

Preparations of Cyllin :—

Cyllin Capsules (palatinoids)—Recommended for Gastric or Intestinal Antisepsis.

Cyllin Syrup—For use where indicated in Infantile Diarrhœa.

Cyllin Inhalant—For use with Cyllin Inhalator in suppurative conditions of the bronchial passages, &c.

Lano-Cyllin—For use in Eczema, Pruritus, and other Inflammatory conditions of the Skin.

Cyllin Pastilles—Antiseptic Throat Lozenges; invaluable for purposes of mouth hygiene.

Cyllin Obstetrical Lubricant, Soaps, Lint, Dusting Powder, etc.

See Pamphlet entitled "Standard Chemical Disinfectants." Copies, together with working Samples, sent gratis and postage paid on applying to

Jeyes' Sanitary Compounds Co., Ltd., 64, Cannon St., London, E.C.

A Lecture
ON
LUPUS ERYTHEMATOSUS: ITS NATURE AND TREATMENT.

Delivered at the Medical Graduates' College and Polyclinic on Feb. 17th, 1908,

BY J. M. H. MACLEOD, M.A. ST. AND., M.D. ABERD., M.R.C.P. LOND.,

ASSISTANT PHYSICIAN FOR DISEASES OF THE SKIN, CHARING CROSS HOSPITAL; PHYSICIAN TO THE SKIN DEPARTMENT, VICTORIA HOSPITAL FOR CHILDREN; LECTURER ON SKIN DISEASES, LONDON SCHOOL OF TROPICAL MEDICINE, ETC.

GENTLEMEN,—My reasons for choosing lupus erythematosus as the subject of my lecture to-day are mainly two: (1) because recently this disease has attracted considerable attention, especially from the point of view of etiology, and various facts have been noted which tend to a broader conception of it and strongly suggest that it is not an entity due to a single specific cause like lupus vulgaris is, but is rather a pathological state which may be superimposed on other morbid conditions of the skin or may occur *de novo* in a predisposed individual as the result of a variety of causes; and (2) because in the experience of everyone who has been called upon to treat lupus erythematosus it is one of the most intractable and capricious of skin affections, and any assistance which this wider view of its causation may give to a more rational treatment of it will be welcomed.

The clinical appearances of lupus erythematosus are so familiar that it will be unnecessary to describe them in detail, but to refresh your memories on the subject I will ask you to look at these patients who suffer from various types of the disease and this series of photographs and plates. Lupus erythematosus, as illustrated by these patients, is a multiform disease of which there are several main types which merge imperceptibly into one another, but which require to be realised in view of the problems of etiology. The two chief varieties are (*a*) the discoid or circumscribed type which is chronic in its evolution and course, and (*b*) the disseminated and more or less acute type. Of these the discoid type is by far the more common. It forms about 90 per cent. of the cases in the skin department at Charing Cross Hospital during the last ten years, and about 80 per cent. of all the cases which have been exhibited at the Dermatological Society of London from 1882 to 1907. The "butterfly" area of the face is the most usual site for the discoid lesions, but they may occur also on the ears, scalp, fingers, and occasionally on the buccal mucosa. There are several varieties of discoid lesion: (1) a well-defined lesion with a more or less raised border and an adherent scale in the centre which feels rough and on being raised up reveals the presence of horny plugs extending down into the follicles; this variety was described by Hebra as seborrhœa congestiva; (2) a non-scaly type in which the lesions are more or less raised, pinkish red in tinge, and in which the epidermis is little if at all affected, the lesions approximating in their appearance either those of the multiform toxic erythemata or where they are small and nodular simulating lupus vulgaris; and (3) a variety in which the most marked feature is the presence of telangiectases over the lesions. The telangiectatic variety, originally described as such by Radcliffe Crocker, is comparatively rare, only four out of 94 cases shown at the Dermatological Society of London being of this character and two out of 50 cases taken from the records at Charing Cross Hospital. (*b*) In the second main type, the acute disseminated, as the name indicates, the lesions develop much more rapidly and the area involved is more extensive. The lesions of this type generally appear first as vivid erythematous patches about the face, which become covered with adherent scales, spread quickly, and coalesce to involve large areas. Other situations become affected, such as the trunk and limbs, and in severe cases the skin may be almost universally affected. In a case which recently was under my care the whole of the bat's-wing area of the face became covered in a few weeks by a bright patch of erythema surmounted by greyish-white adherent scales. The rapidity and acute development of these lesions have led on several occasions to a slight difficulty in distinguishing them from erysipelas, a difficulty which is accentuated by the fact that in many of the acute cases the onset of the eruption is accompanied by febrile symptoms. The above brief description of the various types of lupus erythematosus will serve to show the multiformity of the disease. The lesions all possess two characteristics, however—namely, that of persistent erythema, and that of being succeeded by more or less atrophic scarring; and it is these characteristics which suggested to Sir Malcolm Morris the name "erythema atrophicans" and to Unna the name "ulerythema" (from οὐλή, a scar), names which are both preferable to lupus erythematosus, as they do not suggest a connexion with tuberculosis nor lead to confusion with lupus vulgaris.

NATURE AND CAUSATION OF LUPUS ERYTHEMATOSUS.

Ever since M. Cazenave in 1851 recognised this disease as an entity and named it lupus erythematosus its etiology has been a favourite subject of discussion among dermatologists. Six years before Cazenave published his historical paper the affection had been described by Hebra under the heading of "seborrhœa congestiva," since he considered that the seat of origin of the disease was the sebaceous glands, one of its early recognised characteristics being the presence of greasy plugs like comedones in the pilosebaceous follicles. It was subsequently pointed out that the plugs were composed of horny material and were the result of an increased activity of the process of cornification, and that this condition affected not only the mouths of the follicles but also the intervening epidermis over the diseased area. At the International Congress of Medicine held in London in 1881 the nature of lupus erythematosus was discussed by Kaposi and the two main views then put forward were (1) that the disease was a simple inflammatory process and (2) that it was a new growth. The general conclusion which was arrived at then was that the affection was a peculiar type of inflammatory process which did not begin in the sebaceous glands. Unna maintained that though at first its nature was inflammatory a granulation tissue formed eventually which gave rise to the atrophic scar. More than a quarter of a century ago, therefore, there was an unanimity of opinion as regards the affection being an inflammatory process of a peculiar kind, but there was a divergence of opinion as to the cause of it. Erasmus Wilson thought it was an "inflammatory affection arising from exposure to irritating influences," and various other suggestions of this nature were made. With the discovery of the tubercle bacillus by Koch in 1882 a new interest was aroused in the subject and it began to be asserted that this disease was one of the cutaneous manifestations of tuberculosis, an opinion which is still *sub judice*, and which during recent years seems to have gained rather than lost ground among our French colleagues. It will be of interest to review briefly the arguments on this point in the light of recent observations on the subject.

THE RELATION OF LUPUS ERYTHEMATOSUS AND TUBERCULOSIS.

The facts that tubercle bacilli, so far as I am aware, have not been found in the lesions of lupus erythematosus, though numerous attempts have been made to find them, that inoculation experiments with the tissue in susceptible animals have been unsuccessful, and that the histological architecture of the lesions does not even suggest tuberculosis, prove that at all events lupus erythematosus differs essentially from lupus vulgaris in not being the result of the reaction of the skin to the tubercle bacillus *in situ*. The supporters of the tuberculosis theory grant this, but maintain that the lesions are due to the presence of the tuberculous toxin in the skin which has reached there viâ the blood-stream and has been produced by bacilli situated in some remote tuberculous focus—in other words, that lupus erythematosus belongs to the class of skin affections which has been designated in France the "toxi-tuberculides." Of the various arguments which have been advanced to support this hypothesis the most important are the following.

(1) *In a certain number of cases of lupus erythematosus there is personal evidence or a family history of tuberculosis.*—Out of 42 cases of Boeck[1] of Christiania 28 gave a history

[1] Boeck: Archiv für Dermatologie und Syphilis, vol. xlii.

of tuberculosis; in 185 out of 250 cases collected from the literature by Roth[2] there were evidences of tuberculosis; eight out of Kaposi's 11 fatal cases of acute disseminated lupus erythematosus died from tuberculosis; in 18 out of 38 cases reported by Kopp[3] evidences of tuberculosis were present; in 18 out of 71 cases reported by Sequeira and Balean[4] there were personal evidences of tuberculosis; and in 34 cases there was a definite family history of it. In opposition to these suggestive statistics there are others which are much less favourable to the hypothesis. Walther Pick[5] gave an analysis of 43 cases and only 18 of these gave positive evidences of past or present tuberculosis; out of 119 cases collected by Veiel[6] personal evidence of tuberculosis was obtained in only 5 per cent. and a family history of it in 7 per cent.; out of the 94 cases which have been exhibited at the Dermatological Society of London in only ten of these was there a record of tuberculosis in the patient and in two others a family history of it is noted. This coincides with my own experience at Charing Cross Hospital and in private, where out of 10 cases which I have recently had under close observation in only one of them was there evidence of tuberculosis in the patient, and in none of them was there a history of tuberculosis in the family, at least as to near relatives. Of course, it is only fair to concede that in a certain number of these cases evidences of tuberculosis may have been missed and an accurate family history not been obtained. But allowing for a certain percentage of error, there still remains a large number of cases in which no evidence of tuberculosis could be detected. Various methods have been invoked to reduce this possibility of error. For example, injections of the old tuberculin have been given and in several instances where tuberculosis was only suspected a sharp reaction has established the diagnosis. Walther Pick injected tuberculin in 29 cases of lupus erythematosus and in only 15 of these a general reaction occurred, and these were all cases in which clinical evidence of tuberculosis had been noted and only one of these cases reacted locally. Recently Bunch[7] examined the tuberculo-opsonic index of 10 patients with lupus erythematosus, none of whom showed any personal evidence of tuberculosis, though in three of them there was a definite history of it in near relatives, and in seven of these cases the opsonic index was normal to tubercle. Occasionally patients with lupus erythematosus have died from some intercurrent disease and a post-mortem examination has been obtained and an opportunity thus given of a thorough examination for evidence of internal tuberculosis. In a case of this nature recently reported by Kren[8] the most careful search gave negative results.

2. *The clinical appearances of the lesions of lupus erythematosus may so closely resemble those of lupus vulgaris as to make the differential diagnosis almost impossible.*—This argument has been used by a number of writers on the subject, but it is one which does not seem to me to bear close scrutiny. The same argument might be advanced with regard to lupus vulgaris and certain late syphilitic lesions of the type which has been named "syphilitic lupus," for there the difficulty in diagnosis may be even greater. There may be considerable difficulty in a few rare cases of lupus vulgaris of the superficial type described by Leloir as "lupus érythémateide," an example of which I show you here, but apart from the history and the tendency to ulceration a microscopical examination should easily distinguish it from lupus erythematosus.

3. *In a certain number of cases lupus erythematosus occurs in association with various lesions of the skin, which are generally placed in the class of the "tuberculides"* and regarded as due to the tuberculous toxin, such as lichen scrofulosorum, the papulo-necrotic tuberculide, and erythema induratum. Several facts have recently been elicited which go to show that erythema induratum is a definitely tuberculous manifestation due to the tubercle bacillus *in situ*. But this association of lupus erythematosus with tuberculides is comparatively rare and only strengthens the observation that lupus erythematosus can occur in tuberculous subjects, but does not prove that it is due to the tuberculous toxin.

These are the chief arguments which have been advanced and none of them seems wholly convincing. Against the hypothesis is the important observation that in spite of the vast number of injections of both the old and the new tuberculin which have been given for diagnostic and curative purposes I have never seen an instance or read of one in which an injection has produced an eruption of lupus erythematosus, while there are several instances on record of an eruption of lichen scrofulosorum, which is believed to be due to the tuberculosis toxin, having followed an injection. To sum up, it may be said that in spite of the most searching examination by every means at present at our command, in a larger number, if not in the majority, of cases of lupus erythematosus no evidence of tuberculosis either personal or in the family can be detected. In those cases in which there is an association with tuberculosis, considering that tuberculin injections rarely cause a local reaction in lupus erythematosus nor produce the eruption *de novo*, there is no positive proof that the tuberculosis toxin is the cause of the disease. It may be conceded that tuberculosis acts as a predisposing factor by reducing the power of resistance of the patient, but considering the prevalence of tuberculosis it might as reasonably be argued that the connexion is a casual coincidence.

VARIOUS OTHER TOXINS AS THE CAUSE OF LUPUS ERYTHEMATOSUS.

There are various facts connected with lupus erythematosus which lend support to the view that in some cases the disease is the result of toxins circulating in the blood-vessels of the affected areas. Of these the most important are the following:—

(*a*) *Symmetry of the lesions.*—Symmetry is a marked feature in the eruption in many cases. This is noticeable in the circumscribed cases where both cheeks, both ears, or both hands are involved in a symmetrical fashion. It may be even more marked in the acute disseminated cases where extensive lesions may occur symmetrically distributed about the trunk or the limbs.

(*b*) *The resemblance of the lesions in certain cases to the lesions of the toxic erythemata* which do not persist nor leave scars and which are grouped under the heading of erythema multiforme. The resemblance has been frequently commented upon. So close may this resemblance be, both with regard to the type of the lesions and their distribution, that great difficulty may be experienced in deciding whether the case in question should be placed in the one group or in the other. In many of the milder cases of erythema multiforme discoid lesions occur about the face and hands which are not unlike the non-scaly variety of lupus erythematosus. It is in the acute disseminated cases where this resemblance is most marked and the differential diagnosis presents great difficulty. But not only may the lesions of lupus erythematosus and erythema multiforme resemble one another clinically, but the resemblance is also borne out in their histological architecture. I recently examined a series of sections from a red raised patch of erythema multiforme and a circumscribed lesion of lupus erythematosus. In the case of the former the changes which were present both in the corium and the epidermis were evidences of an acute inflammatory condition of the skin which suggested as a cause a toxin reaching the skin viâ the blood-vessels. In the sections of lupus erythematosus the most marked change was a degeneration and obliteration of certain of the blood capillaries, an inflammatory cellular infiltration around them, and a proliferation of the epidermis with a thickening of the horny layer. A comparison of the two sets of sections led to the conclusion that histologically the differences between the two were more of degree than of kind,[9] suggesting in the case of erythema multiforme the action of a toxin on a healthy tissue, and in lupus erythematosus a less virulent toxin acting for a longer period in a situation where, for anatomical or other reasons, the circulation was feeble, and causing a chronic inflammatory disturbance, followed by imperfect repair and resulting in atrophy.

(*c*) *Association of lupus erythematosus with various forms of general toxæmia.*—Lupus erythematosus, especially the acute disseminated type, has been shown to coexist with various

[2] Roth: Ibid., 1900, vol. ii., p. 247.
[3] Kopp: Deutsches Archiv für Klinische Medicin, vol. lxvi.
[4] Sequeira and Balean: British Journal of Dermatology, 1902, vol. xiv., p. 367.
[5] Pick, Walther: Archiv für Dermatologie und Syphilis, 1901, vol. lviii., p. 358.
[6] Veiel: Report of the International Dermatological Congress, 1892.
[7] Bunch: British Journal of Dermatology, 1907, vol. xix., p. 411.
[8] Kren: Archiv für Dermatologie und Syphilis, 1905, vol. lxxv., p. 303.

[9] For a detailed description of the histology of these sections vide British Journal of Dermatology, 1908, vol. xx., p. 75.

forms of general toxæmia, such as Bright's disease, hepatic disease, alcoholism, &c. There are numerous instances on record of its association with nephritis. A typical example of this was recently under my care at Charing Cross Hospital. The patient, a young woman, aged 17 years, was sent to the hospital last August by Mr. C. F. Clarke of Plumstead suffering from lupus erythematosus, involving almost the whole of the face in a symmetrical manner, extending down on to the neck and occurring to a slight extent on the hands. The patient had had scarlet fever when she was nine years old. Three months before she came to hospital she had what was described as a severe bilious attack, on account of which she was confined to bed for a few days, and at this time the lupus erythematosus first appeared on her face. It spread rapidly till it involved the whole of the classical butterfly area and extended from there back to the ears and down on to the neck. Under treatment with salicin internally and various local applications the erythema gradually disappeared, and by October it had completely gone, leaving a definite atrophy of the skin behind it. But at this time the patient seemed to be ill and showed symptoms of kidney disease. The urine presented a large quantity of albumin, her legs became swollen, and she had frequent attacks of sickness and vomiting. In December these symptoms became more marked, purpuric lesions appeared about her feet, and she died early in December in a state of profound anæmia. Four cases of lupus erythematosus associated with nephritis occur in the records of the Dermatological Society of London and three of these were of the acute disseminated type. Mr. T. S. Short of Birmingham recently described a fatal case with nephritis in which at the post-mortem examination there were extensive pneumonic consolidation on both sides, marked cloudy swelling and small hæmorrhages in the kidneys, but no signs of tuberculosis.[10] An instance of the association of lupus erythematosus with disease of the liver was recorded by Dr. James Galloway and myself,[11] in which a woman, aged 36 years, had acute lupus erythematosus involving the greater part of the skin of the face, with smaller patches on both upper extremities, back, and lower extremities. The eruption was markedly erythematous, suggesting erythema multiforme, and tended to disappear, leaving a superficial atrophy of the skin with destruction of pigment. The patient was an in-patient at Charing Cross Hospital under Dr. Galloway and was found to be suffering from characteristic cirrhosis of the liver, which was enlarged and at one time extended half-way between the costal margin and the umbilicus. It was ascertained, also, that the patient was a chronic alcoholic. It is unnecessary to labour this point further, and there seems little reason for doubting that the lupus erythematosus in the case quoted and in other cases of similar type was the result of toxins circulating in the blood produced by a diseased state of the kidneys and the liver.

ASSOCIATION OF LUPUS ERYTHEMATOSUS WITH CIRCULATORY DISTURBANCES.

The co-existence of lupus erythematosus with abnormalities of the circulation is too frequent to be a mere coincidence and a consideration of this association seems to show that there is a causal connexion between them. In a large number of the cases the patient shows evidences of a weak peripheral circulation. The large majority of cases (about 70 per cent.) of lupus erythematosus occur in women who are more liable than men to suffer from circulatory abnormalities, such as cold hands and feet even in warm weather, a mottled cyanosed condition of the hands and forearms, a moist state of the skin of the palms and soles, and a tendency to chilblains. Various other circulatory anomalies have been observed in this connexion, such as cyanosis of the cheeks, especially marked about the malar prominences, a profusion of telangiectases in the same situation, swellings of the tip of the nose, ears, and fingers, "dead fingers," and in a few cases the more serious phenomena of Raynaud's disease. Four examples of the association with Raynaud's disease have been demonstrated at the Dermatological Society of London (Colcott Fox, Radcliffe Crocker, Pringle, &c.). Out of 15 cases of lupus erythematosus carefully analysed by Wilfrid Warde[12] only three of them exhibited no anomaly of the circulation, while chilblains occurred in eight, cold extremities in two, "dead fingers" in three, local asphyxia in two, and marked telangiectases of the face in one. But not only is it the rule for lupus erythematosus to occur in the subjects of a feeble peripheral circulation, but the actual lesions due to that defective circulation may persist and imperceptibly become transformed into lesions which one would unhesitatingly declare to be lupus erythematosus. This is especially the case with regard to chilblains, the persistent type of which, where ulceration has occurred with subsequent scarring, may be practically indistinguishable from certain lesions of lupus erythematosus. As an illustration of this point I show you here two cases (1) of persistent chilblains of the fingers which have a tendency to ulcerate, and (2) a case of lupus erythematosus of the nose and buccal mucosa, associated with lesions in the hands of a similar but more advanced type, certain of which are indistinguishable from lupus erythematosus, while others have a tendency to break down like ulcerating chilblains.

It would seem then that a feeble circulation is a potent predisposing factor in the causation of lupus erythematosus. This view is further strengthened by the fact that lupus erythematosus most frequently occurs in situations where the capillaries are apt to be defective from anatomical reasons, situations where the skin is more or less tightly stretched over bones or cartilage, such as the malar prominences, nose, auricles, and scalp. In these positions should a strain be put on the vessels they may become permanently dilated and their walls eventually degenerate. It is these very situations—namely, the cheeks, nose, auricles, and backs of the hands—which are most exposed to the action of cold, heat, sunlight, and other local irritants.

Time will not permit of my discussing this attractive subject at greater length, but it will be of advantage to summarise briefly the views herein expressed. 1. At the present time there does not seem to be sufficient evidence, clinical, histological, or bacteriological, to prove that lupus erythematosus is a tuberculous manifestation; nor is there conclusive proof that in those cases in which it occurs in tuberculous subjects that the tuberculous toxin is the direct cause of it. 2. A study of lupus erythematosus in its many aspects strongly suggests that it is not in the true sense a pathological entity due to one specific cause, but is rather a morbid condition of the type of an erythema, which is persistent in character and tends to be succeeded by atrophy, and which may be brought about by a variety of causes in a predisposed individual.

Predisposing causes.—As predisposing causes may be cited (*a*) hereditary weakness; (*b*) enfeebled states of health resulting from any general morbid condition of which tuberculosis and rheumatism are probably examples; (*c*) a weak peripheral circulation and various circulatory disturbances arising from anæmia, morbus cordis, &c.; and (*d*) a delicate condition of the blood-vessels in the situations usually affected owing to anatomical reasons.

Direct causes.—(*a*) Local causes, of which the most common are atmospheric influences, such as cold, sudden changes from heat to cold, occasionally sunlight, traumatism, bites from mosquitoes or other insects, or local microbic action; and (*b*) toxins reaching the skin viâ the blood-stream, such as toxins resulting from imperfect metabolism in the alimentary tract or from a defective state of the kidneys, liver, or other organ.

TREATMENT.

Lupus erythematosus has long been recognised as one of the most intractable of skin affections. The long and disappointing list of drugs which have been from time to time put forward as internal or local specifics is in itself an indication that our methods of treatment are uncertain and have been based rather on empiricism than on a clear understanding of the causation of the disease. Unfortunately, the last word has not been said on this subject yet, but the views expressed above may serve provisionally as a guide to a rational treatment. There is another reason why the list of supposed cures for the disease is a long one, and that is the fact that its lesions occasionally tend to spontaneous involution, and various remedies which happened to be in use when the eruption faded have got the credit of having cured it. The treatment is naturally divided into general and local treatment, and of the two the local treatment is the one which up to the present time has afforded the best results,

[10] Short: See British Journal of Dermatology, 1907, vol. xix., p. 273.
[11] Galloway and MacLeod: British Journal of Dermatology, 1903, vol. xv., p. 81.
[12] Warde, ibid., 1902, vol. xiv., p. 382.

certain cases having been undoubtedly cured by local means alone. The judicious combination of both, however, is calculated to give the best results.

General treatment.—The first important consideration is the condition of the patient behind the skin disease and the treatment on general principles of any defect in general health. The lowered vitality which is associated with a weak peripheral circulation and acts as a predisposing cause may be the result of a variety of influences, such as hereditary or acquired disease, disturbances of the alimentary tract, anæmias, diseases of the heart, kidneys, or other important organs. These must be carefully sought for and dealt with by appropriate means. It is of importance also that everything which tends to cause marked dilatation of the cutaneous blood-vessels, such as alcohol, condiments, &c., should be avoided, unless in small regulated quantities in exceptional circumstances. By these general means, especially if the disease is in its early stage, the resisting power of the blood-vessels may be so increased that various local causes, though still active, will only produce a reactive hyperæmia, transient in type, like a patch of erythema or an ordinary chilblain, and will not become persistent nor go on to degeneration and atrophy. In those more or less acute and disseminated cases in which the disease results directly from toxins circulating in the blood the obvious indication is to eliminate or to neutralise the toxins. As the exact nature of the toxins responsible where the disease is associated with such general toxæmias as result from nephritis, disease of the liver, rheumatism, &c., is uncertain, the appropriate antitoxin is not available but various drugs are employed which are known to have an antitoxic action, such as quinine and salicin. Salicin has been strongly recommended by Radcliffe Crocker, beginning with doses of 15 grains three times a day, increased to 30 grains. Besides its action on the toxin salicin is a cardiac depressant and reduces the hyperæmia in the skin. Quinine was recommended by Payne and its action can be intensified by painting the lesions at the time with tincture of iodine, and favourable results have been recorded by this combined method. Various other drugs have been employed, such as arsenic, iodide of potassium, and ichthyol, the last named being used extensively by Unna in doses of five minims in capsules three times a day. The results from these drugs are, as a rule, disappointing, and more benefit can usually be derived from the treatment of the patient on general principles than by reliance upon them.

Local treatment.—Before commencing any form of local treatment it is important to impress on the patient the necessity of protecting the skin as far as possible from the direct causes of the disease of which the most potent are probably cold and exposure to rapid and great changes of temperature. In order that the local treatment may be rational in character it is necessary to appreciate the different features of the histology of the lesions. These may be tabulated briefly as follows: 1. In the early lesions there are (*a*) marked dilation of the capillaries in the upper part of the corium; (*b*) œdema in the same layers with a rarefaction of the white fibrous tissue; (*c*) a cellular infiltration localised chiefly round the blood capillaries and consisting of polynuclear leucocytes, small round mononuclear cells, a few spindle-shaped cells and an occasional mast cell; (*d*) œdema of the deeper portion of the epidermis; (*e*) thickening in places of the prickle-cell layer; and (*f*) thickening of the stratum corneum, extending down into the mouths of the follicles, and where the underlying œdema was excessive an imperfect cornification with the formation of a scale. 2. In older lesions the hyperæmia and œdema are less marked but the blood capillaries may be blocked up with cells, the endothelial lining degenerated, and the cellular deposit more formative in character and evidently in process of causing atrophy.

These histological characteristics indicate in the first place that however successful the local treatment may be, once the lesion is in the second stage atrophy is bound to follow, but if the lesion is made to involute in its early stage there is a possibility of its disappearing without leaving marked traces behind it. Except in its final stage the lesion of lupus erythematosus is essentially moist. On the actual surface there is a covering of dry horny material, which is more or less scaly, but the deeper portion of the epidermis and the upper layers of the corium are markedly moist. Unna has aptly compared the histology to a bog covered with a layer of green moss which looks firm but which is unsafe to step on. The first indication in the local treatment is the removal of the adherent scales and the prevention of them re-forming. This can be done effectively by means of Hebra's soap spirit (sapo viridis, 2 ounces; spirit. vini, 1 ounce) applied on a piece of flannel or by the employment of 2 per cent. salicylic acid ointment. After the removal of the scale the next indication is the *drying of the lesions.* This can be done by bland powders to absorb moisture; by lotions containing an insoluble deposit, which act by evaporation and by leaving a coating of powder on the surface; and by pastes which are thick ointments containing equal parts of powder and grease. Of these a useful powder is magnesium carbonate and zinc oxide in equal parts, as the former absorbs a large quantity of moisture for its bulk. One of the best lotions is the time-honoured zinc-calamine lotion containing: prepared calamine, 15 grains; zinc oxide, 10 grains; glycerine, 20 minims; lime water, 1 drachm; and rose water to 1 ounce. And a serviceable paste is: zinc carbonate, 1½ drachms; starch, 2 drachms; lanoline, 2 drachms; and vaseline, 2 drachms.

A further indication is the *reduction of the hyperæmia* and vascular dilatation. For this purpose ichthyol, a drug which has the reputation of reducing congestion, may be employed with advantage. It is generally used as an ointment with vaseline and in strengths of 3 per cent. to 10 per cent. It may also be added to the above paste, and in this way two objects are achieved by the one application. In the use of both ointments and pastes it is of importance to keep them applied continuously either by spreading them on lint or by employing them in the form of a plaster. Formalin is another drug with an astringent action which has been recommended in this connexion, but it is hard and irritating and must be used with great caution in the form of a 5 per cent. to 10 per cent. ointment. Adrenalin has also been recommended, but on the whole ichthyol is the most useful. A mechanical method of reducing the hyperæmia by means of continuous pressure which is simple and sometimes effective, is to paint the lesions two or three times daily with collodion, and to this may be added 1 per cent. salicylic acid to destroy the scaliness.

These various remedies, with the exception of formalin, are of a bland description and give better results than the caustic remedies which were once extensively employed, such as acid nitrate of mercury, sublimate, silver nitrate, and carbolic. These methods are essentially destructive in character, and though they are all capable of removing the lesion they are apt to do so at the cost of an unsightly scar. They should only be resorted to in the case of small circumscribed lesions covered with a thick scale. Of the milder caustics two of the most useful are oxidised pyrogallic acid 6 per cent. in a paste applied daily, and resorcin 10 per cent. solution in spirit painted on the lesions once a week. In the case of very small lesions various operative measures may be employed, such as multiple scarification, electrolysis, and the actual cautery; great care, however, must be exercised in operating to avoid undue scarring.

With regard to the more modern methods of treatment by radiotherapy, improvement and occasionally cure have been recorded after exposure to Finsen light, x rays, and high-frequency currents. In my experience the Finsen light has given the best results. In four cases out of six which I have recently treated in that way more or less marked improvement was obtained, and in one of them, of which I show you a coloured drawing, a patch of about the size of half-a-crown almost completely disappeared. Where the lesions are of old standing and are covered with thick adherent scales the exposure to the Finsen lamp should be given in the ordinary way, employing a compressor and attempting to get a reaction. Where the lesions are extensive and superficial in type the plan suggested by Norman Walker of exposing the skin at a distance of 10 inches from the lamp without a compressor, for half an hour every second day may give improvement, while the ordinary method of exposure may aggravate the lesions. Theoretically the reaction from a Finsen lamp should result in the breaking down of the degenerated capillaries and the removal of the cellular infiltration; unfortunately, the vessels being in a weakened state, the reaction which occurs is of a feeble type in the cases which are benefited, and scarcely occurs in those which do not improve under the action of the rays. With regard to the x rays my experience has been disappointing and so far in

the cases which I have treated by them no distinct benefit has been derived from their use. In small doses the rays stimulate the skin and may produce irritation, and in large doses they are contra-indicated since they cause permanent dilatation and destruction of the vessels if pushed to the extent of a reaction, and these are the conditions in lupus erythematosus which we are endeavouring to cure.

In the latter half of this lecture no attempt at an exhaustive description of the treatment of this disease has been made, and many remedies which have proved of value in the hands of others have doubtless been omitted. I have only endeavoured to give you a brief outline of the methods which have given the best results in my own experience, and the reasons for their use as indicated by a study of the causation of the disease, in the hope that they may be of some service in assisting you in the treatment of this most capricious of skin affections.

OBSERVATIONS ON ENDEMIC CRETINISM IN THE CHITRAL AND GILGIT VALLEYS.[1]

BY R. McCARRISON, M.B., B.CH. R.U.I.,
CAPTAIN, INDIAN MEDICAL SERVICE; AGENCY SURGEON IN GILGIT.

THE present study of endemic cretinism is based on an analysis of 203 cases of the disease, comprising the total cretinous population of the Gilgit and Mastuj districts. These districts extend over an area of about 500 miles of Himalayan country. The cases have been collected by a house-to-house examination of almost every goitrous village in the district, so that few examples of the disease have escaped my observation.

At the outset I should, perhaps, direct attention to the fact that the observations to be detailed and the conclusions to be drawn refer only to cretinism as prevailing among the Chitrali and Gilgiti races. It will be found necessary when applying these results elsewhere to take into consideration such factors as racial differences, habits of life, climatic conditions, &c., which are of importance in determining the prevalence of the disease.[2]

For convenience of discussion I propose to divide my subject into the following six sections: (1) the incidence of cretinism and its relationship to the incidence of goitre; (2) goitre in the individual and its relationship to cretinism; (3) goitre in the mother and its relationship to cretinism; (4) debilitating factors and their influence on the mother in producing cretinism; (5) types of the disease with associated symptoms; and (6) conclusions.

1. *The Incidence of Cretinism and its Relationship to the Incidence of Goitre.*

As is well known, endemic goitre, cretinism, and deaf-mutism are associated conditions. In this respect Gilgit and Chitral provide no exception to the rule. There are certain facts, however, with regard to the association which are deserving of comment. (*a*) Where goitre is commencing in epidemic form, as for example in Nagar,[3] or among troops introduced into infected areas,[4] the younger members of the community are the first to suffer. Such an epidemic, however, produces no cases of cretinism. (*b*) In Chitral, on the other hand, where a relatively high percentage of children is goitrous, cretinism does occur, but is not common. I have been unable to trace a single instance in which goitre in the child has given rise to cretinism. Cretinism does not make its appearance in a goitrous family until the second or even the third generation. (*c*) Now, in Gilgit children suffer much less from goitre than do the children of Chitral, but they suffer much more from cretinism. Goitre is said to be of comparatively recent introduction into Chitral. In Gilgit it has prevailed for centuries and in districts where goitre is more prevalent among the adult population cretinism is more common and of a graver type. (*d*) Cretinism shows a marked tendency to occur in certain families. It is common to find several children in the same family cretinous. I have met with instances where every child in the family has been a cretin. While, therefore, cretinism is found to be intimately associated with goitre, the degree of this association is determined by the age of the endemic of goitre and by the extent to which the disease prevails among the adult population.

2. *Goitre in the Individual and its Relationship to Cretinism.*

Just as endemic goitre is rarely found to produce myxœdema in the adult, so this condition is rarely a cause of cretinism in the child. Indeed, I have never met with such a case. This fact is opposed to the present day view that 75 per cent. of cretinism in goitrous localities is due to goitre in the individual.[5] Facts bearing on this point have already been dealt with in the preceding section; the following further observations remain to be recorded. 1. There are in the present series of 203 cases 88, or 44 per cent., in which there is an accompanying goitre. With the exception of two cases, in which the goitre was congenital, the history shows that the thyroid enlargement was subsequent and not prior to the appearance of the cretinic symptoms. It is possible that in some instances these histories may be incorrect; the accompanying chart (Fig 1.),

FIG. 1.

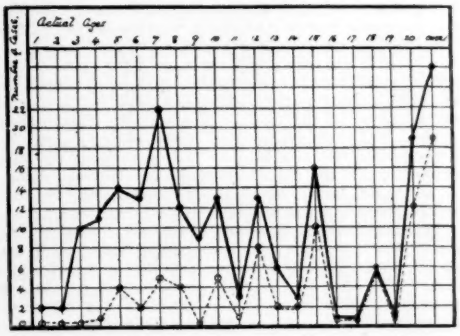


Chart showing the actual number of cretins at each year of age; also the number of goitrous cretins at these ages. The unbroken line shows the number of cretins and the broken line that of goitrous cretins.

however, should establish this general truth. The unbroken line shows the number of cretins, the interrupted line the number of goitrous cretins in the district at each year of age up to and over 20 years. From the chart it will be observed that the older a cretin is the more likely he is to have a goitre. While only 17 per cent. of all cretins under the age of 10 years are goitrous no less than 70 per cent. over that age have an accompanying goitre.

2. I can find little support for the view that goitrous cretins are, as a rule, less swollen and their condition relatively less grave than that of those without a goitre.[6] Of the 88 goitrous cretins 20 per cent. are noted as being much swollen, while in the non-goitrous cases 25 per cent. are similarly much swollen. So far as my experience goes I find that the presence or absence of a goitre is a matter of very little importance to the child's myxœdematous condition. The mental defect is, however, frequently greater, and nervous symptoms are more commonly present in these without a goitre. It is to be remembered that the so-called "goitre" is in reality made up, in the vast majority, of one or more adenomata in a functionally inactive or imperfectly active organ. The presence of such a goitre would not be beneficial to the child. There are, however, some few cases in which the development of a goitre would appear to have been beneficial. Mr. James Berry in his work on the thyroid gland has instanced a case where the general body swelling diminished as the goitre enlarged. I have met with two similar cases. I have noted the presence of "fatty tumours" in 24 per cent of my cases.

[1] A paper read before the Medical Section of the Royal Society of Medicine on Oct. 27th, 1908.
[2] McCarrison: Observations on Endemic Goitre in the Chitral and Gilgit Valleys, Transactions of the Royal Medical and Chirurgical Society, vol. lxxxix.
[3] McCarrison: Loc. cit.
[4] Baillarger: Enquête sur la Goitre et la Crétinisme, Baillière et Fils, Paris, 1873.
[5] Richardson: The Thyroid and Parathyroid Glands, Blakiston, 1905.
[6] Diseases of the Thyroid Gland, Churchill, 1901.

3. Cretins are much more commonly goitrous than are healthy children.

3. *Goitre in the Mother and its Relationship to Cretinism.*

Our conception of endemic goitre has undergone some change of late years. The disease has hitherto been regarded as non-infectious. My investigations, however, have convinced me of its infectious nature. This view, although perhaps not yet sufficiently proven to demonstration, nevertheless provides the better explanation of its general phenomena and of its sequel—endemic cretinism.

There are, as is well known, certain infectious diseases of the mother, such as tuberculosis, erysipelas, acute rheumatism, malaria, and influenza, which are capable of producing pathological effects on the child's thyroid gland. It is believed that the toxins produced by the organisms of these diseases circulate in the fœtus and give rise to the morbid condition. It is to these toxins that cases of sporadic cretinism, in which there is no associated goitre, are attributed.[7] Although infectious agencies have an undoubted influence in the production of endemic cretinism this action is not limited, as has been supposed, to non-goitrous cases of the disease. Of all infectious diseases which impair the unborn child's thyroid mechanism the most important is endemic goitre. It is that disease which is beyond all others most frequently associated with cretinism.

Now in almost every case of cretinism goitre is present in one or both parents. It is present in the mother in 86 per cent. of my cases, in the father in 40 per cent. The presence of a goitre was not noted in the mother in 28 cases. In 20 of these the mother herself was not seen or was dead. If these are excluded as uncertain goitre is found to have been absent in the mother in only eight cases, or 4 per cent. While, therefore, cretinism can occur in the child of a woman free from goitre, it must be established, as a rule, that in endemic localities goitre in the mother is one of the most essential conditions for the development of cretinism in the child.

Maternal goitres are in over 80 per cent. of cases degenerated, the seat of adenomatous or of cystic change. Such an organ cannot be regarded as possessing the same potential powers of functional activity as a normal gland. The investigations of Baumann have shown that a goitre contains less thyroidin than a normal gland, thus demonstrating the functional deficiency of the goitrous organ. Despite this defect the thyroid mechanism of the majority of goitrous women is capable of meeting the additional demands which pregnancy or other accidental circumstances may make upon it. There is, however, a minority in which this is not the case and it is this minority which constitutes the mothers of cretins.

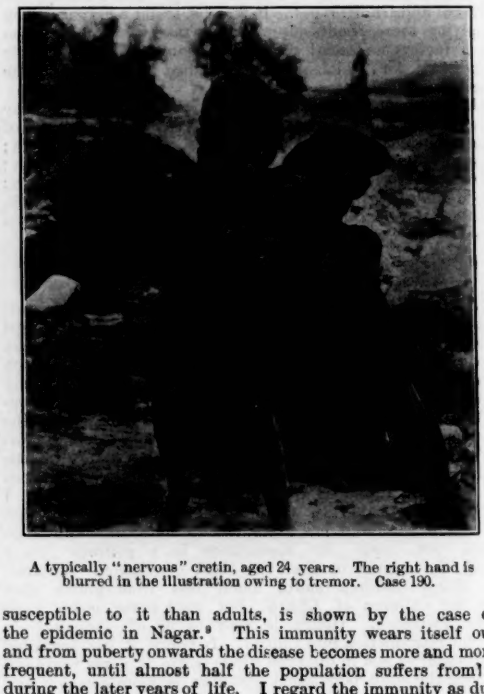
The experiments of Halstead and Edmunds on animals have shown the effect of an impaired action of the thyroid mechanism of the mother on the offspring. They afford, I think, an explanation of the train of events which gives rise to cretinism, especially when they are considered in connexion with the infectious origin of goitre. In describing these experiments I quote from Edmunds's work[8] on the subject: "Halstead found in the puppies of a bitch from which the thyroid gland had been removed, and which had been sired by a dog that had also in part been deprived of its thyroid gland, that the thyroid lobes in the puppies were 20 times larger than those of normal puppies." Edmunds repeated this experiment and obtained a similar result. He found that the changes observed on microscopical examination were those of "compensatory hypertrophy" and "were presumably due to an attempt to compensate for the absence of thyroid in the mother." The function of the thyroid mechanism is to neutralise toxins produced in the ordinary course of metabolism. In the case of the partially thyroidless bitch of this experiment there were more toxins circulating in the blood than her impaired thyroid mechanism could deal with. These toxins called forth a response on the part of the puppies' glands and determined the resultant congenital goitre.

Richardson in his work on the thyroid gland surmises that the reverse of this experiment would probably occur and would account for a certain percentage of the cases. He says: "Should the mother have an excess of thyroid secretion the gland in the young would not develop and consequently the child would show cretinic symptoms after weaning. ..... The occurrence of a cretinic condition without goitre where goitre is endemic, suggests that the parenchymatous increase of the maternal gland, in conjunction with the normal hypersecretion of pregnancy, prevents the development of the fœtal gland." I am of opinion that it is unnecessary to assume a reverse picture to that of the experiment quoted, believing as I do that its results are applicable directly to the goitrous pregnant woman. That in such a woman there is no excess of unutilised secretion is shown by the fact that the administration of the gland extract causes a reduction in size of the hypertrophied organ in both pregnancy and goitre. It appears to me that it is not the excess of secretion but the greater excess of demand that is of importance. It is the failure to meet all demands which constitutes a temporary inefficiency o these glands and places the woman in a position identical with the partially thyroidless animal of the experiment. The goitrous mothers of cretinous children very commonly exhibit in their own persons signs of thyroid insufficiency during pregnancy. Of these signs perhaps the most noticeable is that of tetany.

There is, then, a certain minority among goitrous pregnant women in which the thyroid mechanism is deficient; these are the mothers of cretins. The results of the experiment are applicable to them but with this difference—that whereas the partially thyroidless bitch, under non-goitrous conditions, gave birth to offspring congenitally goitrous, the partially thyroidless woman, under continuous exposure to goitrous influences, gives birth to cretins.

The children of Gilgit, as I have already stated, are relatively immune to goitre. Succeeding generations have under continuous goitrous influences developed this degree of natural resistance to it. That children in other localities are not naturally immune to goitre, but are indeed more susceptible to it than adults, is shown by the case of the epidemic in Nagar.[9] This immunity wears itself out and from puberty onwards the disease becomes more and more frequent, until almost half the population suffers from it during the later years of life. I regard the immunity as due to the minimal action of the toxic agent of goitre on the developing fœtal organism, which gives rise in the child to considerable cumulative powers of resistance. But where, owing to insufficiency of the maternal thyroid, toxic agencies are allowed freer play, this action on the developing fœtal

FIG. 2.



A typically "nervous" cretin, aged 24 years. The right hand is blurred in the illustration owing to tremor. Case 190.

[7] Richardson: Ibid.

[8] Edmunds: The Pathology and Diseases of the Thyroid Gland, Pentland, 1901.

[9] McCarrison: Loc. cit

organ is continuous and excessive, resulting in compensatory hypertrophy, or atrophy of whole or part of the thyroid mechanism. I believe that just in so far as the mother's thyroid potentiality possesses the inherent power of response to every demand, so far may we expect her child to be born temporarily immune to goitre, with congenital goitre or with cretinism; all of these I regard as being but stages in the same process and the evidence of the minimal, medial, or maximal action of the toxic agents on the unborn child's thyroid mechanism. The following cases may be quoted in support of the views which have been expressed.

No. 100.—The mother is partially myxœdematous. She has a small goitre and suffers from tetany. These attacks are worse during pregnancy; they are more frequent during the spring months, when she may have as many as two or three during one month. There is no unconsciousness during them. She has always been myxœdematous but believes that she is better than she used to be. She gives a very goitrous and myxœdematous family history. She has had eight children before the present child. They were all, according to her, "born cretins." All were very swollen from birth and all died before the age of three years.

Nos. 190 and 191.—The family is very poor. The mother has a large tumorous goitre and suffers from tetany during pregnancy; she is coarse-skinned and somewhat swollen. Her son, aged 24 years (Fig. 2), is a typical nervous cretin of an extreme degree; he is a deaf-mute. Her daughter is a typical myxœdematous cretin, aged 18 years, whose hearing and speech are defective. The mother has had nine children, of whom four are alive, and all show signs of cretinism, the two youngest in lesser degree than the two eldest just described.

No. 82.—The mother has had three perfectly healthy children. She then developed goitre and subsequently gave birth to the present child who became a cretin after a convulsive fit at the age of two years. This cretin is 20 years of age and is very swollen.

4. *Debilitating Factors and their Influence on the Mother in Producing Cretinism, Congenital or Acquired.*

1. *Mental disease.*—The importance of mental disease in the parents of cretinous children is so slight that from an etiological point of view it may be neglected.

2. *Alcoholism.*—Alcoholism, owing to the fact that the religion of the people prohibits its use, exerts no influence.

3. *Syphilis and tuberculosis.*—Syphilis and tuberculosis are rare as yet, although of late years they have become more prevalent. In only one of my cases is there a history of tuberculosis.

4. *Nervous disease; tetany.*—The only important nervous disease is tetany. In a recent study of the affection I found that of 56 mothers who are sufferers from tetany, 13, or 23 per cent., have any cretinous children.

5. *Consanguinity.*—Among the Syeds of Gilgit cretinism is much more common than among other classes of the community. The Syeds of all Mahommedan countries, as descendants of the Prophet, are permitted to marry only in their own sect. In Gilgit these Syed families are few and it is practically impossible for one of their members to marry out of a goitrous family. As a consequence the stock is goitre-tainted and the taint is accentuated by in-breeding. There is a history of near marriage in 14 per cent. of my cases, and in some it is the only factor present in addition to goitre in the mother. In-breeding is, therefore, a factor of some importance.

6. *Psychic factors.*—Fright, worry, mental depression, and impressions received by the mother during pregnancy have great weight as determining factors. There is a reliable history of one or other of these in over 40 per cent. of my cases. The following cases are examples.

No. 142.—A goitrous mother, haunted by spirit while pregnant with her first child. This child is a cretin and a deaf-mute. Her second and third children are alive and healthy.

No. 157.—A goitrous mother lost her first two children, who were healthy, while pregnant with her third child. She "remained always crying and in grief for them." Her third child was "born a cretin" and is deaf-mute. The next three children are alive and healthy.

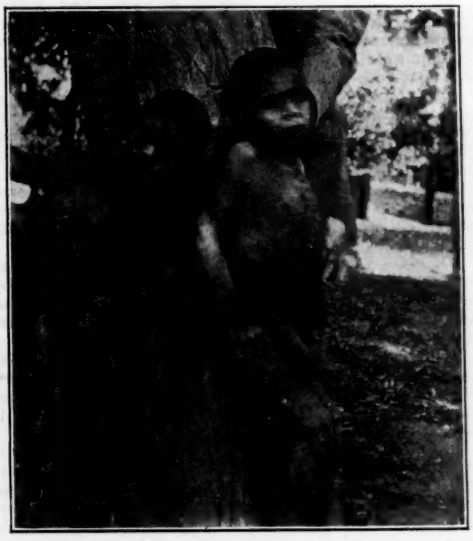
No. 177.—The mother is goitrous. The first two children, girls, are alive and healthy. The third child, a son, died during the fourth pregnancy. The fourth child was "born a cretin" and is a deaf-mute. The fifth child was healthy but was a girl. The sixth child was a deaf-mute. The cause was stated by mother to be "grief at the death of her only son."

No. 175.—The mother is goitrous. The first five children died young, the deaths of several of these occurring during the mother's seventh pregnancy. Her seventh child is a cretin and a deaf-mute. Her sixth child is alive and healthy. She attributed her evil fortune at the death of her children to a "spirit" which preyed greatly upon her mind during her seventh pregnancy. Afterwards the priests exorcised the "spirit." Her eighth child was born normal and is alive and well.

No. 22.—The mother is goitrous. After having borne two healthy sons she went to live in a house which she believed to be haunted. Her next three children are all cretins.

Nos. 85-90.—The mother was a goitrous woman whose husband died after she had borne to him a male child. This child fell from a roof at the age of one year and became a typical nervous cretin (the boy to the right of the spectator in Fig. 3). The woman suffers from tetany and has a small tumorous goitre. The second husband was a man of another village to whose house she took her cretinous son. She had two sons by this husband; they are both cretins and deaf-mutes and both are of an extreme grade of "nervous cretinism." There were, as is so often the case in this country, living in the same house as her second husband two other married women. Of these one had already borne two daughters who are perfectly healthy. But after the arrival of the first woman and her cretinous son she gave birth to a child who is a "nervous" cretin and deaf-mute. This child is quite helpless. The other woman was not a mother at this time, but she afterwards had two children, a boy and a girl, both of whom are "nervous" cretins and deaf-mutes.

FIG. 3.



"Nervous" cretins with slight myxœdematous symptoms, swelling of face, wrists, and ankles, and in the armpits. Cases 85 and 86.

It will have been observed that the type of cretinism is in all cases the same. The mothers attribute the fact that they gave birth to cretinous children to "their continually seeing the first woman's cretinous boy in the house" and "to fear that their unborn child might be like him." There is no other history of difficult labour, near marriage, or illnesses during pregnancy to account for the condition of the children in the case of the last two mothers. A very exceptional fact in the case of the last mother is that she has no goitre. There is in her case no other history whatever apart from the mental impression.

A history of the baneful influence of "the powers of evil"

is very common, and so much so that one is forced to acknowledge it as real. Other frequent histories are that "while in the jungle with the goats the mother was haunted by a fairy," that she "saw visions," or that she "saw the dead," forms of delusional insanity which, though regarded by the mother as being the causal or exciting factor in producing cretinism in the child, may perhaps be considered as evidence of the defective functional activity of her own thyroid gland. It is known that some cases of delusional insanity are due to this cause and that they may be relieved by thyroid feeding. On the other hand, it is possible that the psychic influences caused the functional depression.

7. *The influence of illnesses in the mother.*—As already stated, the most important factor is maternal goitre. There are, however, three other diseases which when occurring in goitrous women appear to favour the production of cretinism. These are malaria, rheumatism, and arthritis deformans. Others less frequently occurring are painful eye diseases and severe abscesses about the head. In 20 per cent. of all cases there is a history of illness in the mother to which the child's cretinism may reasonably be attributed. The following will serve as illustrative cases.

No. 169.—The mother, who is goitrous, had suffered from granular ophthalmia before her third child was born. The disease resulted in her total blindness. The first two children were healthy, the third was a cretin, and the fourth died at the age of four years but was healthy.

No. 177.—A goitrous mother who had suffered from rheumatism while she was pregnant with her second child. This child is cretinous to a very severe degree but is non-goitrous. The first and third children are healthy. The fourth child is dead.

No. 164.—The mother, a goitrous woman, developed severe bronchitis before her sixth child was born, from which she still suffers severely. Her first five children are normal. Her sixth is a cretin.

No. 161.—The mother had abscess of the jaw before her third child was born. Her first two children are healthy. Her third child is a cretin. The fourth and fifth children are dead but they "looked cretinous" according to the mother's statement.

I believe that illnesses in the mother are of more frequent occurrence than I have noted; it was not till I had collected 78 cases of the disease that a few histories of such illnesses which had been voluntarily offered drew my attention to them.

8. *Prolonged or difficult labour.*—There is such a history in 14 per cent. of the cases. It is very frequently given in addition to other factors, such as fright, or mental distress, or illnesses during pregnancy. Its importance is therefore difficult to estimate. It does, however, occur in certain cases where there is no other history and in these it may be regarded as a debilitating factor acting on the child directly.

These are the main influences which operate on the unborn child to produce cretinism. They account for about 88 per cent. of the cases, and since their action is solely through the maternal environment they may be regarded as "congenital." Cretinism, however, is not always congenital in the strictest sense of the word. It may also be "acquired." It need not, that is to say, make its appearance at birth, but may ensue upon certain external quasi-mechanical eventualities. These may be divided into two classes—(*a*) nutritional and (*b*) accidental. (*a*) The nutritional factors are: insufficient milk and ill-nourishment generally, exposure to cold, defective hygiene, and the like. Their action, however, is slow and their influence slight. They account for 2 per cent. of my cases. (*b*) The accidental circumstances which give rise to cretinism are three: injury, fright or nervous shock, and disease.

Slightly over 10 per cent. of all cases of cretinism are to be classed as "accidental." About one-half of these are goitrous, and in these also, with the exception of one case in which the goitre is congenital, the thyroid has enlarged subsequently to the onset of the cretinous symptoms. The ages at which the disease has made its appearance in these cases vary between six months and 10 years. It should, however, be pointed out that these "nutritional" and "accidental" factors are exciting rather than causal in their relation to the disease. To account for them I believe that it is necessary to presuppose a congenital instability of the thyroid mechanism together with the continued action of goitre toxins.

I recognise the possibility of a perfectly healthy child becoming a cretin after prolonged exposure to goitrous influences. I have not, however, met with such a case. These influences, of course, play a very important part in aggravating congenital cretinism, and if from any cause whatever the child's thyroid mechanism is incapable of combating them, it is reasonable to conclude that cretinoid symptoms may manifest themselves.

Cretinism and sex.—In the series of cases which came under my observation I have found a considerable preponderance of the male over the female sex. The proportion is as 5 to 2. This preponderance is still maintained among cretins who are also goitrous, but it is much less marked, the proportion being as 5 to 4. The relatively higher death-rate among female children in Gilgit is responsible in some part for the lower proportion of female cretins.

5. *Types of the Disease.*

There are in this district two distinct types of the disease apart from the many divers grades of the affection which are ordinarily met with: (1) the myxœdematous type; and (2) the nervous type. Cases commonly present the clinical features of a combination of these. Deaf-mutism is an almost constant accompaniment of both types of the disease. With regard to the myxœdematous type of cretinism few remarks are necessary. It corresponds to that form of the affection met with in Europe, and it is described in any text-book of medicine. It is noticeable that in Gilgit it is found for the most part among the richer families; such cretins are better clothed and fed, and the conditions of life under which they live correspond more closely with those of European cretins.

Nervous cretinism.—One third of all cases in the present series belong to this type of cretinism. Among these are included some of the very worst examples of the malady. Cretins of this type, in which the disability is more especially of the central nervous system in contradistinction to those of the myxœdematous type in whom the defect is more especially physical, are usually to be found among the poorest of the people. They are commonly quite helpless and their bodies invariably bear the scars of burns or other injuries. Their parents frequently do not take the trouble to clothe them, and they are exposed to extremes of heat and cold greater than anything met with in England. Their diet consists only of a daily cake of unleavened bread. The general appearance of such a case is as follows (Fig. 2). The skull is elongated, the antero-posterior diameter being long in proportion to the narrow lateral diameter. There is, as a rule, complete deaf-mutism. There is a knock-kneed spasticity of the lower limbs and the patient exhibits a complete or partial inability to stand upright. When supported on his feet he usually rests on his toes and the knees may be close together or actually crossed; or the lower extremities may remain in a position of rigid extension. There is an increased knee-jerk and there may be marked flexion of the toes on the sole. In those cases in which the cretins are capable of walking there is a peculiar stiffness of gait and they may walk on their toes; as each foot reaches the ground there is a certain amount of "give" at the knees and ankles, which produces a sort of bobbing motion. There is sometimes flat-foot. The upper limbs assume a position of right-angled flexion; the thumb may be drawn into the palm and the fingers closed over it, while the wrist is flexed. Purposeless movements of the upper limbs are common. The spastic rigidity is always worse in the lower limbs. The head may be turned slowly from side to side and in several of the worst cases I have seen grimaces occurred. The face is characteristically cretinoid. The degree of swelling varies considerably; it may be marked or slight and confined to the face, hands, wrist, and ankles. The abdomen is, as a rule, swollen and protuberant. There is always considerable stunting of growth which may be extreme or relatively slight. The patient's mentality is much disordered. There appears to be a loss of sensibility in the skin. Puberty is delayed and the sexual organs are ill-developed. A history of convulsive seizures has in a few instances been obtained. A coarse nystagmus and internal strabismus have been noted in some cases. All degrees of this condition are seen, from a spastic paralysis of the lower limbs to a general rigidity. In short, the condition is one of cretinous idiocy with associated cerebral diplegia. Fig. 2 affords a good illustration of this class of case. The subject

is 24 years of age, is about 3½ feet in height, is obviously myxœdematous, and presents practically every feature of the type which I have just detailed. His sister is a typical myxœdematous cretin and is very swollen.

I have sought in the course of my observations to find in the histories of these cases some etiological reason for dissociating the obvious cretinoid condition from the no less obvious spastic condition of the limbs. I have not been able to find that cretins of this type are more frequent among the class of "accidental" cretins. Nor has a history of prolonged labour, of infectious diseases, of convulsions, or of any other affections of childhood afforded any grounds for the dissociation of the nervous from the cretinoid symptoms. The factors which give rise to the diplegic symptoms are ante-natal in all cases; and I believe that it is to the congenital disability of the thyroid mechanism that this condition, like the myxœdematous type, is due. Even in those cases where there is a history of possible injury at birth I believe that this factor operates as an "accidental" circumstance acting in the way I have described in the preceding section.

In the course of this paper I have referred to the thyroid defect in cretinism as being one of the "thyroid mechanism," a defect in which the parathyroids are also included in contradistinction to the more limited defect of the thyroid proper, which is usually considered to be the morbid anatomical factor in cretinism. There can be no doubt that such a lesion exists but that it should extend to the parathyroids is not usually considered. These organs are, in the light of the most recent research on the subject, capable of functionally replacing the thyroid in the absence of the latter, though not completely so.[11] They are, while possessing their own functional powers, an added safeguard to the organism in the case of insufficiency of the thyroid proper, while their own insufficiency would appear in some measure to determine the nervous symptoms present in many cases.

The symptoms which are characteristic of "nervous" cretinism are very similar to those which occur in animals after the complete removal of the thyroid and parathyroid glands. Indeed, as the symptoms are described by Murray,[12] they are practically identical—a fact which affords some ground for the belief which I have expressed. I have, however, obtained results in three cases by means of the therapeutic test of thyroid feeding, and by detailed post-mortem examination of the glands in a fourth, which to my mind amount to actual proof that the nervous symptoms are due to a thyroid defect.

I have had an opportunity during the past year of treating three cases of nervous cretinism on the lines indicated. Without giving full details of these cases, it may be said that the administration of the fresh and dried extracts of sheeps' thyroid has produced a marked improvement in the nervous symptoms. The spasm has disappeared; in one case the double internal strabismus with the associated coarse nystagmus has almost entirely disappeared. In another, a child who could only rise to its feet by means of a support and who could only take two stumbling paces before its legs gave way, after three months' treatment walked for a distance of over 30 yards without falling. This child is nine years old. It was very much swollen and, according to its mother, could not speak the simplest word. She affirms that it can now say "ma" and "da," though it refused to do so before me. There is not the slightest doubt that its hearing has very much improved and the mother has found it possible during the last month to employ it in certain little offices, such as the collecting of bits of wood. The child has grown one inch in height in three and a half months, while the swelling has disappeared and the skin become smooth and soft. The therapeutic test, then, has provided results in these three cases which amply justify my views as to the nature of the condition.

Since writing this paper I have succeeded in one case in overcoming the intense prejudice of the people against post-mortem examination. This case, No. 85, has been referred to in the fourth section of the present article and is one of very great interest. The disease made its appearance at the end of the first year of life and the factor which determined its manifestation was said to be a fall from a low roof. It will be remembered that the mother suffered from signs of thyroid insufficiency. The nervous symptoms in the case were very marked (Fig. 3) and were the most striking feature of the condition. The swelling was slight and limited to the face, wrists, and ankles, with fatty pads in the axilla. There was no marked stunting of growth and the case might readily have been considered to be one of cerebral diplegia with pronounced mental defect. The naked-eye appearances seen at the post-mortem examination of the child were a slight but uniform enlargement of the thyroid gland. It was very firm to the touch and was not nodular. Parathyroid glands could not be found in spite of the most careful search.

I have made at the laboratories of the Royal Institute of Public Health with Dr. H. Dold, pathologist to the institute, a study of the histological appearances of the thyroid gland in the case. We found that there was a great and uniform increase of the fibrous stroma of the organ. The glandular elements were compressed. Typical vesicles were wholly absent and such as were present were almost completely obliterated. Traces only of colloid were seen scattered here and there over the sections. The appearances were those of a struma fibrosa. We were unable to find any trace of parathyroid tissue (Fig. 4).

FIG. 4.

Section of thyroid gland from Case 85. (From a photograph by Dr. Harris.)

Clearly, then, in this case there existed a pronounced defect not only of the thyroid but also of the parathyroid glands. The condition of the thyroid and the deficiency of colloid material furnish, when considered in relation to the results obtained by thyroid feeding in three similar cases, a very striking proof of the truth of the views which I have expressed.

I may here draw attention to the similarity between nervous cretins and cerebral diplegia, not only in symptomatology but also in such facts as are known of their etiology. In cerebral diplegia cortical degeneration is, it is believed, due to the action of some toxic agent. In cretinism the nervous symptoms are attributed, in my view, to toxins, which owing to a congenital insufficiency of the thyroid mechanism are no longer restrained in their action. In those cases of cerebral diplegia in which the etiology is obscure and in which the condition cannot reasonably be attributed to direct injury at birth, thyroid feeding may prove of benefit.

Deaf-mutism as associated with cretinism.—In no less than 87 per cent. of all cases there is an associated degree of deaf-mutism. In the majority of cases it is complete; in the minority it is partial. In the nervous type it is almost always complete, less frequently so in the myxœdematous. The defect of speech may be caused in part by a swollen condition of the tongue, but it is mainly dependent on imperfect development of the higher brain centres, due, I believe, as in the case of the other nervous symptoms, to the unrestrained action of toxins. It is more frequently present

[11] Vincent and Jolly: Journal of Physiology, vol. xxxii., 1904. Vincent: The Thyroid and Parathyroid Glands, THE LANCET, Aug. 18th, 1906, p. 348.

[12] Murray: Diseases of the Thyroid Gland, Lewis, 1900.

in males than in females. The following cases are of interest as showing the relationship of goitre and cretinism to deaf-mutism:—

No. 5.—The hearing and speech are said to have improved after the appearance of a goitre at the age of 12 years.

No. 137.—The patient could hear and speak normally before the age of five years, when he fell from a roof and became a cretin and a deaf-mute.

No. 149.—The patient could hear and speak before the age of seven years when—after a fright—he became a cretin of the nervous type and quite deaf and dumb.

No. 159.—The patient's hearing and speech are improving slowly since the development of a goitre at the age of 35 years. I have referred to the case of nervous cretinism under treatment where the hearing has undoubtedly improved and the child is said to be beginning to talk after three and a half months' thyroid feeding.

6. *Conclusions.*

1. The degree to which cretinism is associated with goitre is determined by the age of the endemic, and varies directly with the extent to which the latter disease prevails among the adult population. 2. Cretinism is rarely if ever due to the development of a goitre in the individual. The thyroid enlargement is, or may be, an effect: it is not the cause of the disease. 3. Defective thyroid function in the mother is the essential factor in the production of cretinism. 4. Cretinism is due to the action of toxic agents, notably that of endemic goitre, on the developing thyroid of the unborn child. 5. The thyroid defect is congenital but it may remain latent pending its manifestation through the impulse of some accidental circumstance. 6. The defect in cretinism is one of the whole thyroid mechanism, of the parathyroids as well as of the thyroid gland. The diversity of symptoms is due to the extent to which the defect bears on the whole or part of that mechanism.

I should, perhaps, once more emphasise the fact that the conclusions have been drawn from data afforded solely by the Gilgit and Chitral districts.

I desire to express my indebtedness to my assistant, Sirdar Sahib Kehar Singh, whose untiring help and whose knowledge of the Chitrali and Gilgiti languages rendered possible the accumulation of material on which this paper is based.

A CONTRIBUTION TO THE STUDY OF THE ADMINISTRATION OF TUBERCULIN IN PULMONARY TUBERCULOSIS.

BY ARTHUR LATHAM, M.D. OXON., F.R.C.P. LOND.,
PHYSICIAN AND LECTURER ON MEDICINE AT ST. GEORGE'S HOSPITAL, AND SENIOR ASSISTANT PHYSICIAN TO THE BROMPTON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST;
AND
A. C. INMAN, M.A., M.B. OXON.,
SUPERINTENDENT OF THE LABORATORIES AT THE BROMPTON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.
(*From the Wards and Clinical Laboratory of the Brompton Hospital for Consumption and Diseases of the Chest.*)

IN a preliminary communication read before the Royal Society of Medicine in April last[1] we showed that a satisfactory immunising response was produced in the blood by the administration by the mouth or rectum of appropriate doses of tuberculin and other vaccines. We showed further that these doses had a definite effect upon the temperature, reducing fever and diminishing the extent of the daily fluctuations, so that the temperature curve often became "flat" and manifested no fluctuation at all for a time; and finally, that the curve of the opsonic index in tubercle and other infective conditions was almost exactly the inverse of the temperature curve.

Since our former communication appeared we have carried out further investigations which confirm or extend our previous work and which appear to us to throw considerable light upon the best method of administering tuberculin in the pulmonary and other forms of tuberculosis. We bring these forward in the hope that they may be of service to others working at the subject, but we purposely refrain from anything more than an incidental allusion to the results obtained in arresting the disease, chiefly because much further study is required before any comprehensive answer can be given to this part of the question and partly because we have so far largely confined ourselves to the investigation of febrile and chronic cases in which the prospect of lasting amelioration was remote. Before going into any detail on the points previously raised by us, we would briefly discuss the position of tuberculin therapy at the present time. Few studies are of such absorbing interest or so instructive as a consideration of the phases through which the use of this method of treatment has passed. We have recently been reminded by Dr. J. K. Fowler, in his address on Modern Medicine at the annual meeting of the British Medical Association, of the disastrous effects produced by the use of tuberculin at the time Koch first recommended it in 1890. A brief trial of tuberculin in the doses recommended by Koch led to its emphatic condemnation at the hands of most of the leaders of medicine of that day, although Koch's work was founded on the sound scientific basis of active immunity. The profession in this country, after a short trial of the remedy, allowed it to fall into discredit and disuse. It apparently never occurred to any of those who so roundly condemned, and who, it may be added, still continue to condemn, tuberculin that the ill-effects produced were due to an improper use of the remedy, and that tuberculin, like many other remedies which do harm when given in excessive doses, would yield good results when given in proper doses. In Germany, on the other hand, a few physicians and surgeons did not at once discard the use of tuberculin, but by careful clinical observation arrived at a system of dosage which, as will be seen later, gives undeniably good results in many cases of pulmonary and other forms of tuberculosis. More recently in England the administration of tuberculin and vaccine therapy in general have at last been placed on a scientific basis by the brilliant work of Sir Almroth Wright and the results obtained have led the profession in this country to reconsider its previous adverse verdict. The methods adopted in Germany and the methods more recently adopted in this country differ in certain fundamental respects, although they have many points in common. In Germany the dose and the intervals between the doses have been determined entirely from a study of the clinical symptoms of each individual patient and increasingly large doses are given so long as the temperature does not rise as a result of any particular dose. In this way very large doses are still used in afebrile cases in the treatment of the disease. Sir Almroth Wright, on the other hand, holds emphatically that the dose of tuberculin and the intervals between the doses can only be satisfactorily arrived at by means of a careful determination of the immunising response of the blood, and he has given us a means for measuring several of the protective substances of the blood, the most important of which, as far as we are concerned, is the opsonic index. In this method doses are given which are sufficient to raise the opsonic index and the aim is to keep the patient as long as possible in a positive phase by repeating the dose at suitable intervals. The doses used have been infinitesimally small compared with the doses used in Germany.

We have had these two lines of treatment—the one depending on clinical observation, the other on laboratory methods—constantly before us in the observations we have made during the last few months, and in our attempt to throw some further light on the best method of administering tuberculin we have simultaneously attacked the problem from both the clinician's and the pathologist's point of view.

1. *On the administration of tuberculin by the mouth.*—Our statement that it is possible to produce immunising responses in the blood by administering tuberculin and other vaccines by the mouth *on an empty stomach* has been amply confirmed.

(*a*) Independent observations by Calmette and Breton[2] show that intra-rectal injections of tuberculin in tuberculous animals produce the same effects as subcutaneous injections. Tuberculin when administered by the rectum to four patients who had given the ophthalmo-reaction caused a rise of

[1] Proceedings of the Royal Society of Medicine, 1908, vol. i., No. 6, Medical Section, p. 195.

[2] Comptes Rendus de la Société de Biologie, vol. lxiv., Feb. 1st, 1908, p. 163.

temperature similar to that which follows subcutaneous injection of this vaccine. Further, M. Calmette has informed us that he finds that tuberculin is also absorbed when administered by the mouth, but he considers that its effects are not so certain or active as they are when it is given by the rectum.

(*b*) The same effects are produced both on the temperature curve and on the opsonic curve as are produced when the method of subcutaneous injection is employed. As far as we can judge, a dose given by the mouth is equal to about half the same dose given under the skin. The absorption from the stomach is rapid; thus we have not infrequently seen the temperature, which was rising during the afternoon, fall within an hour of the administration of an appropriate dose of tuberculin, and conversely in most patients an excessive dose is followed by a frontal headache or other clinical symptoms of undue intoxication in from one to two hours.

(*c*) Two patients suffering from extensive disease of the lungs were gradually immunised by the administration of tuberculin by the mouth until they were able to tolerate without any rise of temperature a dose of one milligramme of tuberculin. Each patient was now given a smaller (yet very large) dose of tuberculin (viz., 1-10th milligramme) under the skin. The temperature curve showed no increase, whilst the opsonic index remained high (see Charts 1 and 2). These observations afford evidence that by the administration of tuberculin by the mouth sufficient immunity had been obtained to prevent any negative phase following the subcutaneous injection of so large a dose as 1-10th milligramme.

In another case in which 1-100th milligramme administered by the mouth was previously followed by a complete absence of the daily fluctuation of the temperature for a week or more, the subcutaneous injection of 1-400th milligramme had no effect one way or the other—that is, the daily subnormal fluctuation of the temperature remained as before.

2. *The relation of the opsonic index to the temperature.*—As will be seen from a study of a number of charts in this paper the opsonic index bears, almost constantly, an inverse relation to the temperature. This we have previously shown to be the case. Charts 3, 4, and 5, amongst others, demonstrate this important point.

(*a*) A patient suffering from advanced tuberculous disease of both lungs (all five lobes showing definite physical signs), ulceration of the larynx, with abundant expectoration containing numerous tubercle bacilli, and a considerable swing of temperature, consented to his blood being examined every two hours from 7 A.M. till 9 P.M., again at 12 midnight, and

CHART 1.

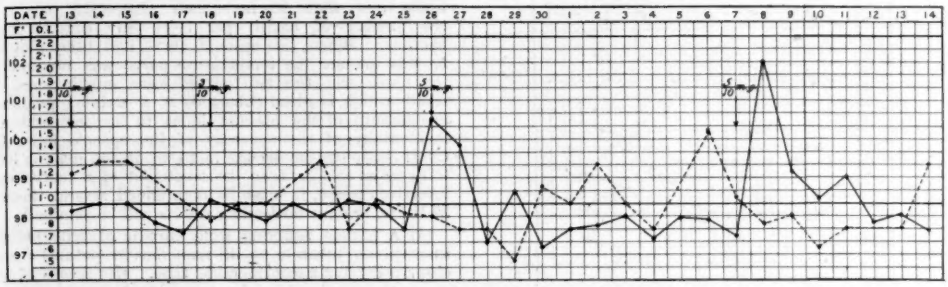


Chart showing the effect of the subcutaneous injection of tuberculin ($\frac{1}{10}$ mg.) in a patient suffering from advanced pulmonary tuberculosis (two lobes and large vomica) who had previously received doses of tuberculin by the mouth, commencing with $\frac{1}{2000}$ mg. and increasing to 1 mg. (one milligramme).

The broken line indicates the opsonic index and the continuous line the temperature throughout.

CHART 2.

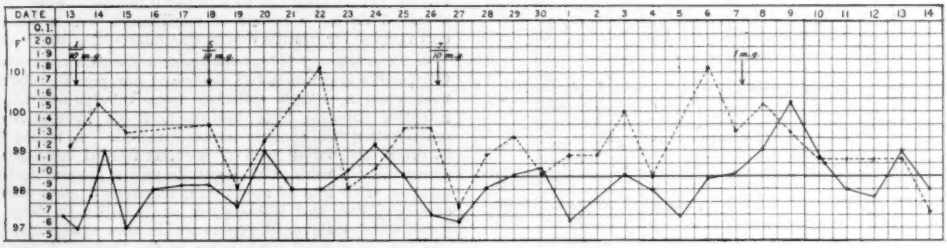


Chart showing the effect of the subcutaneous injection of tuberculin ($\frac{1}{10}$ mg.) in a patient suffering from advanced pulmonary tuberculosis (two lobes and excavation) who had previously received doses of tuberculin by the mouth, commencing with $\frac{1}{2000}$ mg. and increasing to 1 mg. (one milligramme).

CHART 3.

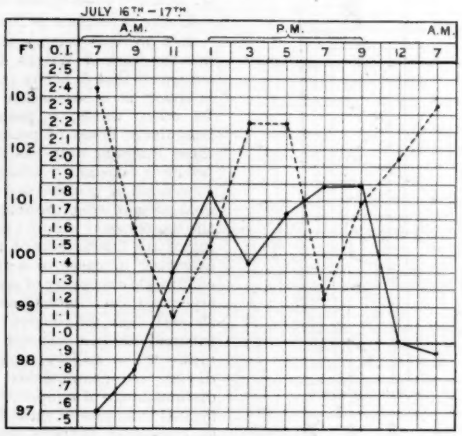


Chart showing the relation of the opsonic index to the temperature during 24 hours in a case of febrile pulmonary tuberculosis.

CHART 4.

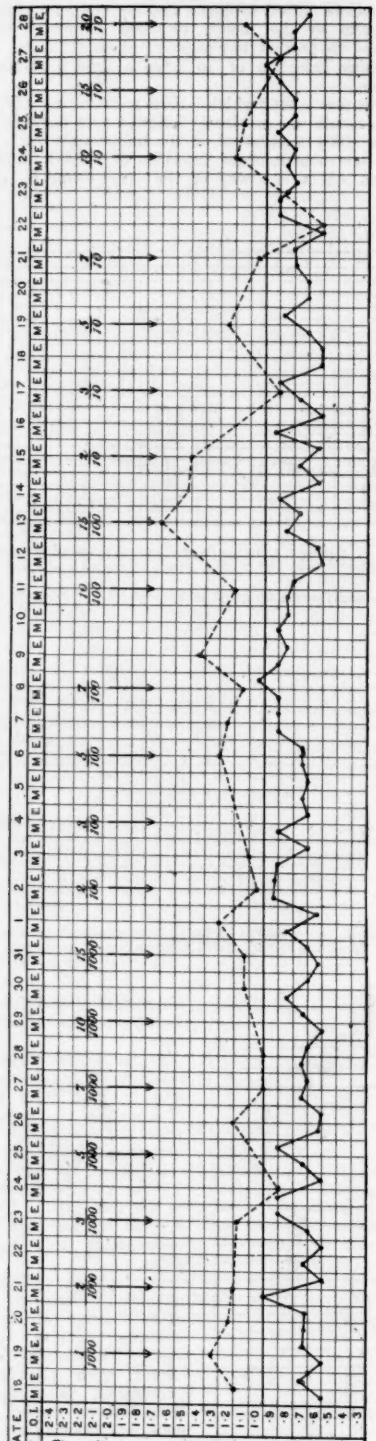


Chart showing the effect of progressively increasing doses of tuberculin ($\frac{1}{1000}$ mg. to 2 mg.) given by the mouth upon the temperature and opsonic index in a case of afebrile chronic pulmonary tuberculosis and emphysema (tubercle bacilli numerous in sputum).

at 7 A.M. on the following day. We wish to emphasise the fact that in this observation, as in all our observations, the blood which was being examined was unknown. In this particular observation the temperatures were taken and the blood drawn off by the nurse at the hours stated above. The bloods were duly numbered by an independent observer and a key kept. In addition two normal bloods were numbered and "lost" among the other specimens. One of us then prepared the necessary films. Dr. C. C. Chidell, of the English Sanatorium, Arosa, who had been working for some months in the laboratory, kindly counted the films for us. The results obtained were then plotted out in accordance with the key. The key showed that the two controls of normal blood both came out within normal limits and that in fact their phagocytic count (i.e., the number of bacilli per cell) only differed by one bacillus. When the opsonic curve had been plotted out in this manner the temperature curve was obtained from the nurse and the two curves were superimposed. The result which is given (Chart 3) is a striking proof of the relationship of the opsonic index to the temperature and incidentally of the accuracy of the opsonic index itself. Chart 3 also emphasises the fact that if the opsonic index is to be taken as a guide to the treatment of a febrile case of infective disease, it must be determined several times each 24 hours, or most misleading results will be obtained.

(*b*) A patient suffering from chronic afebrile pulmonary tuberculosis (tubercle bacilli numerous in sputum) was under observation for a considerable time. His record (Chart 4) shows the relationship of a normal and subnormal temperature to the opsonic index, and also illustrates the importance of any rise of the evening temperature as has been pointed out by Otto Walther and more recently by M. S. Paterson (in connexion with artificially induced auto-inoculation).

(*c*) Chart 5 shows clearly that this inverse relationship of the temperature to the opsonic index is not peculiar to tuberculosis but is common to another infective disease. It was obtained during a course of vaccination with a bacterium coli vaccine for cystitis due to this micro-organism.

3. *The relation of the opsonic index to the clinical symptoms.*—Our further experience has confirmed our previous statement that when a patient suffering from tuberculosis (or other infective disease) feels better, and his symptoms show amelioration, the opsonic index is raised. A falling index is often associated with a peculiar frontal headache just above the eyebrows, with lassitude and a general feeling of malaise, with loss of appetite, a quickened pulse, increased expectoration, and restlessness or inability to sleep. An index which falls rapidly to a considerable extent may be, in addition, associated with pains in the limbs. A low index is associated with lassitude, a feeling of malaise, and a general want of progress. We may remark that, as far as pulmonary tuberculosis is concerned, a low index is not *always* evidence of a negative phase but may indicate a lack of response on the part of the individual to the infection, cf. localised tuberculosis of the skin, &c.

4. *The importance of limiting spontaneous auto-inoculation.*—In a previous communication one of us[3] was able to confirm the work of Wright, Urwick, and Ross, which led to the statement that in active pulmonary tuberculosis "the patient is living in a succession of negative and positive phases." In other words, a patient with active disease absorbs irregularly doses of poison from the diseased focus; and these irregular auto-inoculations of tubercle bacilli or their products constantly affect the opsonic curve and lead to a succession of positive and negative phases. This statement is important when the relationship of the opsonic index and the temperature is borne in mind, for it explains the meaning of the fluctuations of temperature which are constantly occurring in cases of active disease. It is important as it confirms the accuracy of previous clinical observation and more especially the observations of Dr. J. K. Fowler[4] who in 1898 showed that the degree of fever in cases of pulmonary tuberculosis is a measure of the activity of the morbid process. "The miliary, caseous, and fibroid varieties of the disease are characterised in each case by a definite and distinct range of temperature, and this is present not only in typical examples of these forms of the disease but also when, as frequently happens, they appear as temporary complications during the course of a case of chronic pulmonary tuberculosis."

[3] Inman: THE LANCET, Jan. 25th, 1908, p. 220.
[4] Fowler and Godlee: Diseases of the Lungs, 1898, p. 323.

CHART 5.

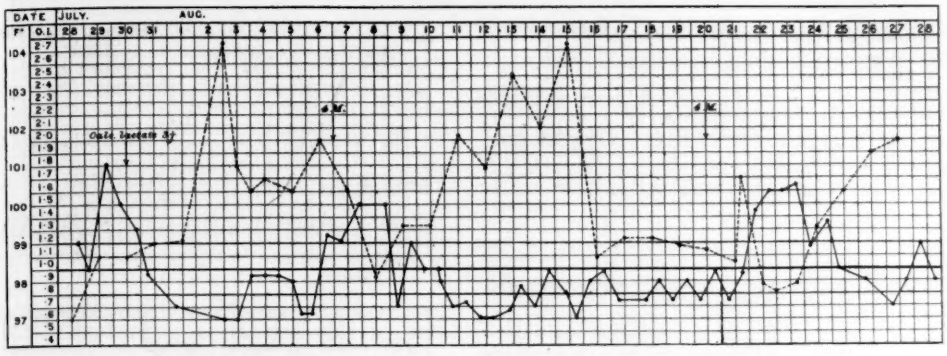
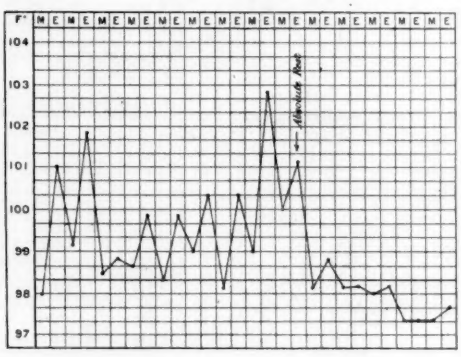


Chart showing the relation between the temperature and the opsonic index in a case of infection of the bladder by the colon bacillus. This chart further shows (1) the effect of the administration of 1 drachm of calcium lactate upon the temperature; and (2) the effect of the administration of (*a*) 5,000,000 colon vaccine hypodermically on August 6th, and (*b*) 4,000,000 colon vaccine orally on August 20th.
Note.—The 4 M. in the chart between August 6th and 7th should be 5 M.—i.e., 5,000,000, as in the description.

The recognition of the existence of constant auto-inoculation in active disease becomes still more important when we come to consider how it is produced and how it may, in many instances, be reduced to limits which can be dealt with by the defensive forces of the body. It has been adequately proved that any movement sufficient to affect the focus of disease has an effect upon the blood and lymph stream, or, in other words, is followed by an auto-inoculation. It should always be borne in mind, therefore, that every movement—cough, excessive respirations, voluntary or involuntary, bodily movements, &c.—may determine an overdose in a case of pulmonary tuberculosis.

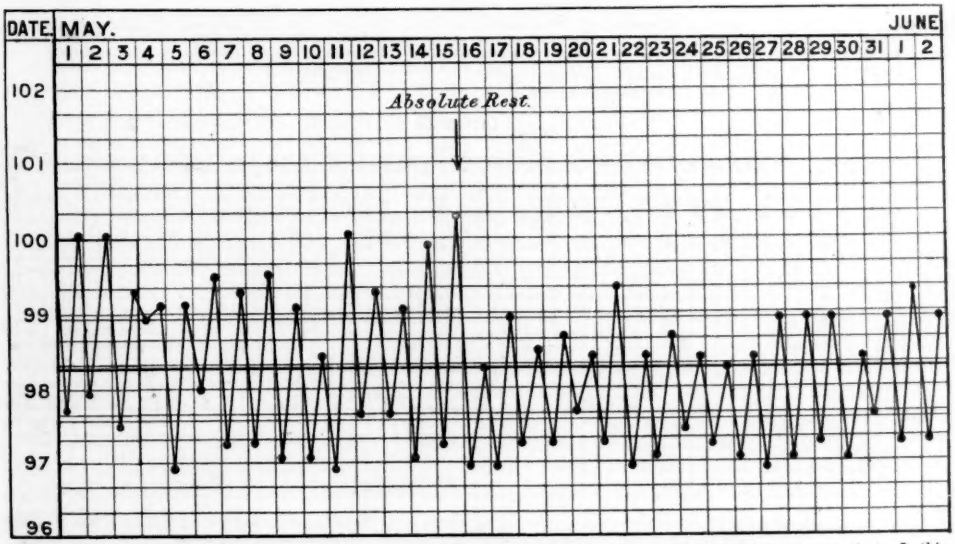
CHART 6.



Temperature chart showing the effect of absolute rest in a case of febrile tuberculosis in which fever had persisted for seven weeks.

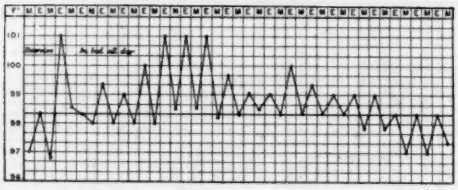
The more we are able to limit the movement of the affected organ the more readily can we reduce the temperature, as is clearly shown in Charts 6, 7, 11, 12, 13. In very many cases this result can only be obtained by means of *absolute* rest of the patient, such as is commonly enforced on those suffering from enteric fever. This is an important observation, for it means that as absolute freedom from movement as possible is essential to the treatment of patients suffering from any form of infective disease, whether it be tuberculosis, pneumonia, enteric fever, or other form. It is unfortunately true that it is impossible in many cases to limit the

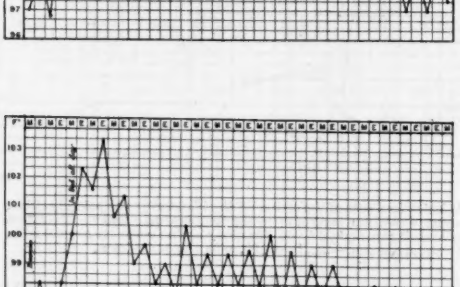
CHART 7.



Temperature chart showing the effect of absolute rest in a case of advanced pulmonary tuberculosis (five lobes and excavation). In this case the administration of tuberculin lowered the temperature temporarily, but the effect of absolute rest was much more definite.

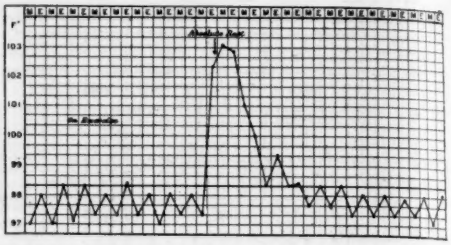
CHARTS 8, 9, AND 10.

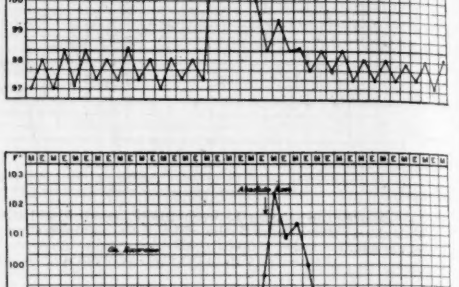




Temperature charts showing the effects of excessive auto-inoculation produced by excessive exercise, and the effect of rest in bed in reducing the fever. It should be noted that the rest was not absolute, the patients being allowed to go to the lavatory and to sit up in bed.

CHARTS 11, 12, AND 13.





Temperature charts showing the effects of excessive auto-inoculation produced by excessive exercise, and the effect of *absolute* rest in bed in reducing the fever. It should be noted that these patients were not allowed to go to the lavatory, nor, indeed, to move at all. They were nursed as if they had been suffering from enteric fever.

CHART 14 (not reproduced owing to mechanical difficulties).—This chart showed the effect of progressively increasing doses of tuberculin, administered by the mouth, in a case of chronic afebrile pulmonary tuberculosis (three lobes; tubercle bacilli present). The initial dose was $\frac{1}{1000}$ mg., and this was gradually increased to 10 mg. There was no febrile "reaction" during the course.

CHART 15.

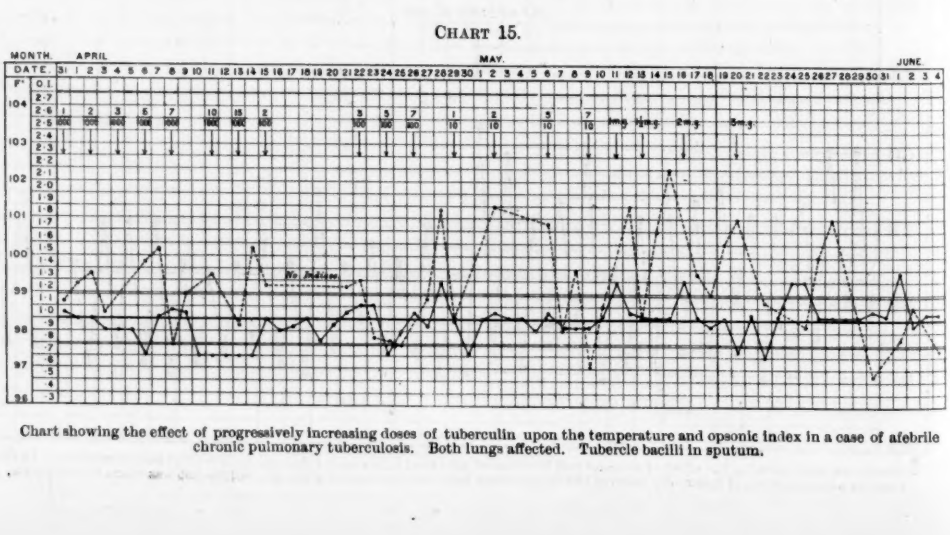


Chart showing the effect of progressively increasing doses of tuberculin upon the temperature and opsonic index in a case of afebrile chronic pulmonary tuberculosis. Both lungs affected. Tubercle bacilli in sputum.

movement of the affected organ sufficiently to stop auto-inoculation. In acute or advanced pulmonary tuberculosis it is often impossible to stop the harassing and exhausting cough. In other instances we are unable to control vomiting. In such cases auto-inoculation to an excessive extent continues and the disease extends. Many a consumptive literally coughs himself to death!

Chart 6 is a striking illustration of the value of *absolute* rest in limiting auto-inoculation and reducing fever. The case was that of a boy suffering from tuberculosis, in which there were no definite localising symptoms. The high temperature and marked daily fluctuation had persisted for seven weeks. The boy was kept in bed all this time but was allowed to go to the lavatory and to sit up in bed for his meals. He was seen by one of us and *absolute* rest was prescribed. The effect, as may be seen from the chart, was immediate: the temperature became at once subnormal and the daily fluctuation was not more than 1°.

Chart 7 shows the same thing but in a less striking manner. It represents the temperature curve of a girl suffering from advanced tuberculosis of both lungs. The administration of small doses of tuberculin and rest in bed under ordinary conditions led to a temporary lowering of the temperature, but the prescription of absolute rest even in so advanced a case was at once followed by a more striking reduction of the fever.

Charts 8, 9, 10, 11, 12, and 13 also illustrate the value of absolute rest in limiting auto-inoculation. They have kindly been lent to us by Dr. M. S. Paterson, the medical superintendent of the Brompton Hospital Sanatorium at Frimley. When the system of graduated labour was first employed at Frimley any patient whose "rest temperature" rose above 99° F. as the result of work was confined to bed. The rest prescribed was not, however, absolute, for patients were allowed to go to the lavatory and to sit up in bed for meals. Charts 8, 9, and 10 show that by means of this partial rest the temperature was reduced to the normal within a week or two. In view of the light thrown upon the effects of overwork by experiments carried out at Frimley,[5] patients at this sanatorium whose "rest temperature" has risen to 99° as the result of overwork have been treated during the last few months by *absolute* rest. They have been nursed just as if they were suffering from enteric fever, have not been allowed out of bed for any purpose, and have been kept as quiet as possible. Charts 11, 12, and 13 show that by this line of treatment the temperature is reduced much more rapidly than was formerly the case and afford additional testimony of the value of complete rest in limiting auto-inoculation in pulmonary tuberculosis.

The administration of calcium lactate in some instances also limits auto-inoculation, presumably by diminishing the absorption of poison by increasing the coagulability of the blood (Wright) and thus rendering the flow of the blood and lymph streams more sluggish. An example of this effect is given in Chart 5. Calcium lactate may be given in two ways—viz., a drachm as a dose, repeated if necessary in two to six hours, or 15 grains as a dose every six hours for four to five days.

On the dosage of tuberculin and the intervals between the doses.—From the preceding observations it will be seen that our efforts have been mainly directed towards finding an answer to the question so urgently needing a solution: What is the dosage of tuberculin in pulmonary tuberculosis? From what has already been said, and from a study of the charts in this paper, it is clear that if we are to rely upon the opsonic index as a guide in cases of active pulmonary tuberculosis three or more determinations of the index must be taken each day. If this is not done the information obtained will be misleading, for the index is constantly fluctuating within wide limits. It is obvious that such frequent determinations of the opsonic index are impracticable both in hospital practice, owing to the number of cases requiring treatment, and in private practice, owing to the expenses connected with such a method. A study of the opsonic index has already shown us to a large extent what the temperature and clinical symptoms mean in terms of immunity, and now that we have learnt their meaning we can gauge with a degree of certainty the changes of phase of the opsonic index at the bedside. The level of the opsonic index cannot be gauged so accurately by this method, but a dissection of the temperature when combined with a careful study of the clinical symptoms is a sufficiently reliable guide in most instances. It is, of course, true that it would be of service in all cases to have a record of the opsonic index, as in every disease the more controls we have over our method of treatment the better. Probably the ideal dose is best determined by a study of the index together with a study of the temperature and symptoms. If, however, we have to choose one or the other as a practical method, there is no question that we must rely on clinical investigations as our routine procedure and use the laboratory as a court of appeal. This is also true of the administration of the patient's own tuberculin by graduated labour. Dr. Paterson agrees with us that the opsonic index may in certain cases give most valuable information as to the advisability or non-advisability of increasing the amount of exercise, but that in most cases a determination of the index is unnecessary.

The German method of administering tuberculin, which is based on clinical observations, is claimed by those who follow it to have given excellent results in cases of pulmonary tuberculosis. It is important to remember that the great majority of these cases are examples of the chronic afebrile form of the disease. These results have been obtained entirely by means of an accurate observation of the temperature chart and general condition of the patient, and in a few cases by additional information obtained from the agglutination test. A reference to Bandelier and Roepke's text-book[6] gives the system of tuberculin administration as practised in Germany. A number of charts are published in this work of cases of afebrile pulmonary tuberculosis which have been treated with progressively increasing doses of tuberculin. The following scheme is given for the administration of Koch's new tuberculin (B.E.):—

1/1000, 2/1000, 3/1000, 5/1000, 7/1000, 10/1000 mg.
15/1000, 2/100, 3/100, 5/100, 7/100, 10/100 mg.
with intervals of 1–2 days;
15/100, 2/10, 3/10, 5/10, 7/10, 10/10 mg.
with intervals of 2–3 days;
12/10, 15/10, 2, 2½, 3 mg.
with intervals of 3–5 days;
4, 5, 6, 7, 8, 9, 10 mg.
with intervals of 4–6–10 days.

Warning is, of course, given that the administration of tuberculin should be omitted if any fever results from a dose. The same dose is usually repeated in these cases, and is not increased until it is tolerated without rise of temperature. Recently Ritter[7] has published an important paper on the value of the administration of tuberculin in the treatment of pulmonary tuberculosis. In his observations he has been guided entirely by the temperature and general condition of his patients. He has used Koch's tuberculin (old and new) and by gradually increasing the dose, usually at intervals of from three to seven days, has reached colossal doses. He usually commences with a dose of 1-1000th milligramme and in some cases he has gradually increased this to 1000 milligrammes! He very kindly sent us temperature charts of cases treated on these lines. In none of his cases did these doses cause more than a transient rise of temperature (maximum 38·4° C. on one occasion only).

Ritter investigated the condition of patients who had been treated with sanatorium treatment and tuberculin and of patients who had been treated with sanatorium treatment only. The results he gives are as follows. Of those in the first stage (Turban) 72 per cent. of those treated without tuberculin were at work as compared with 95 per cent. of those treated with tuberculin; of those in the second stage 57 per cent. of those treated without tuberculin were at work as compared with 82 per cent. of those treated with tuberculin; and of those in the third stage 22 per cent. of those treated without tuberculin were at work as compared with 50 per cent. of those treated with tuberculin. This evidence in favour of the administration of tuberculin is strengthened by a consideration of the following case.

Woman, age 31, Turban Stage III., Tuberculosis laryngis incipiens. Much cough and expectoration. Tub. bac. present.
First treatment (without tuberculin) 8th November, 1903—5th May 1904, Weight 51,0—61·2 Kg. No marked improvement. Tub. bac. present in sputum. On discharge from the sanatorium she was unable to resume her work as school teacher and was placed on the retired list.
Second treatment, 14th January—27th July 1905. On admission the condition of lung and larynx was found to be worse. Tub. bac. present

[5] Inman: THE LANCET, Jan. 25th, 1908, p 220

[6] Lehrbuch der Tuberkulose, A. Stuber's Verlag, Würzburg. 1908.
[7] Deutsche Medizinische Wochenschrift, No. 29, 1908, p. 1259.

CHART 16–16A.

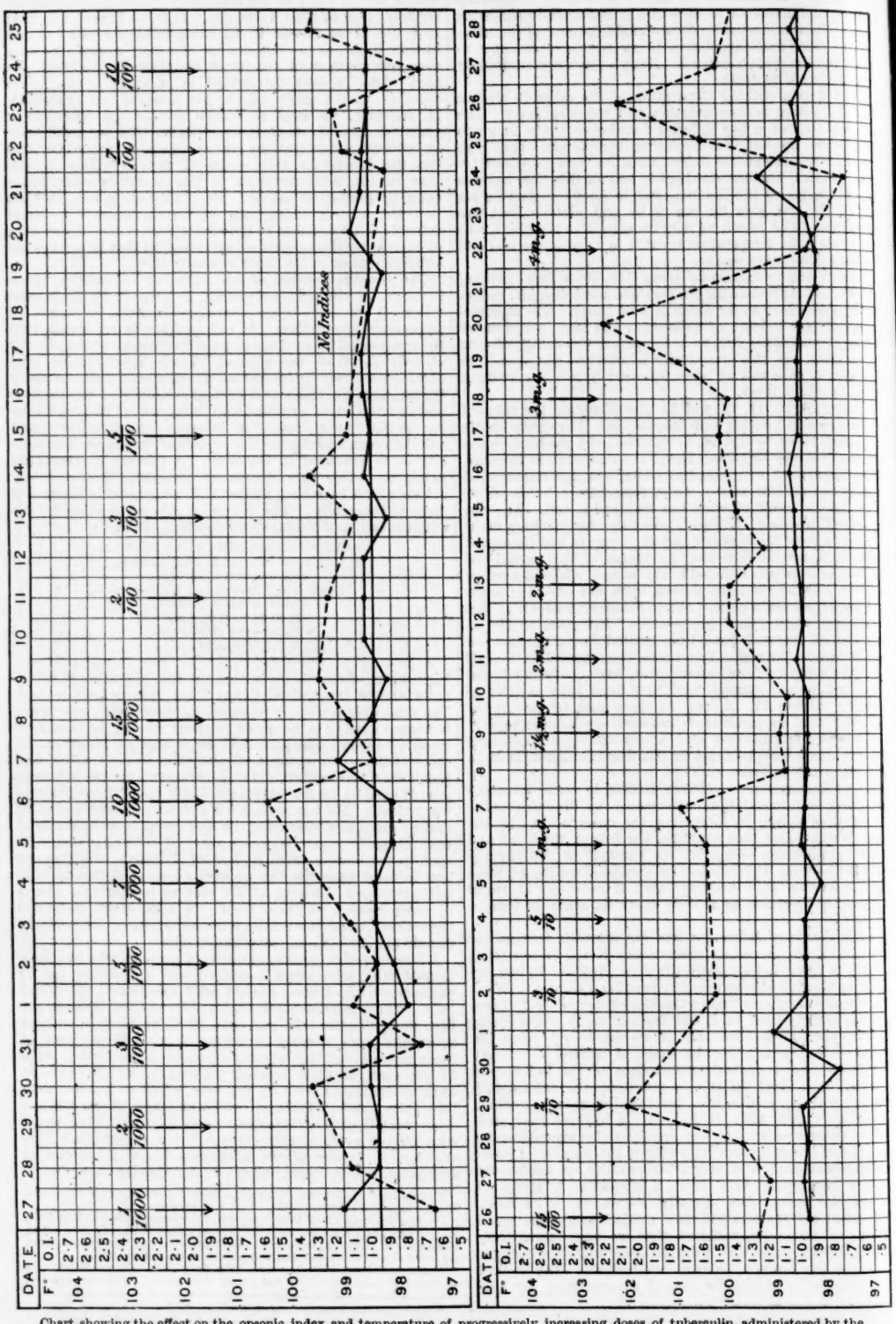
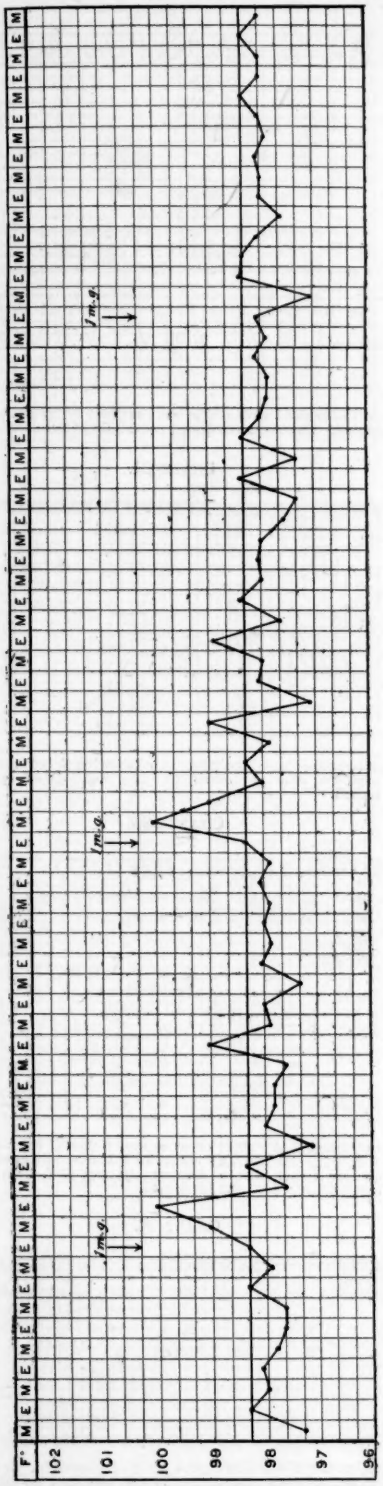


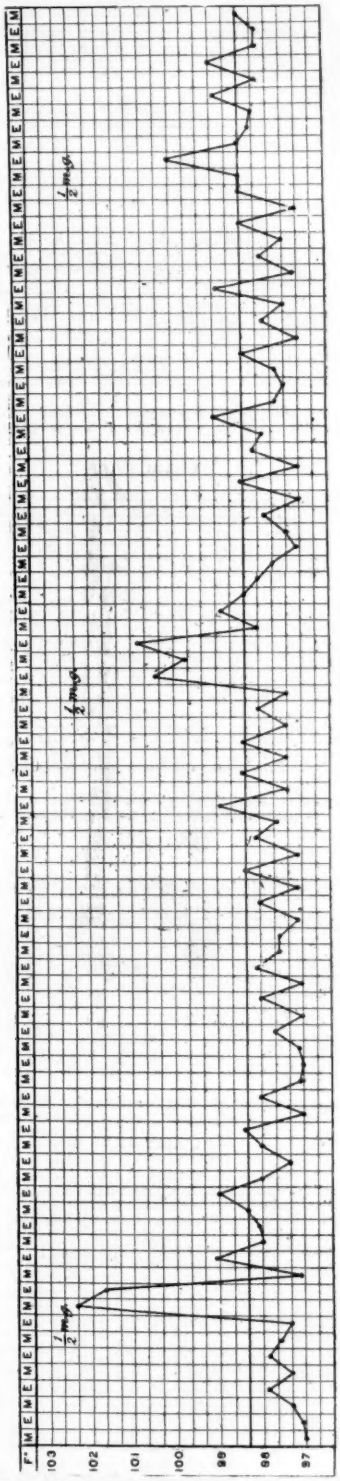
Chart showing the effect on the opsonic index and temperature of progressively increasing doses of tuberculin, administered by the mouth, in a case of chronic pulmonary tuberculosis (tubercle bacilli in sputum). The initial dose was $\frac{1}{1000}$ mg. and this was gradually increased to 5 mg. It will be noticed that the most satisfactory immunity curve was produced by $\frac{1}{10}$ mg. Larger doses were given in spite of this, as the procedure adopted by some continental observers was under investigation. The temperature curve on this chart was the daily maximum temperature and it will be noticed that no febrile "reaction" occurred in spite of the large doses given.

CHART 17.



Temperature chart showing the effect of tuberculin (1 mg. injected subcutaneously) in a case of afebrile chronic pulmonary tuberculosis (two lobes and excavation; tubercle bacilli in sputum). It will be noticed that the first dose caused a temporary rise of temperature to 100° F.; the second dose caused a temporary rise of temperature to 100° F.; whilst the third dose produced no rise but a flattening of the temperature.

CHART 18.



Temperature chart showing the effect of tuberculin (½ mg.) injected subcutaneously in a case of afebrile chronic pulmonary tuberculosis (two lobes and excavation; tubercle bacilli present in the sputum). It will be noticed that the first dose caused a temporary rise of temperature to 102° F.; the second dose caused a temporary rise of temperature to 100·8° F.; whilst the third dose caused a temporary rise to 100° F.

CHART 19.

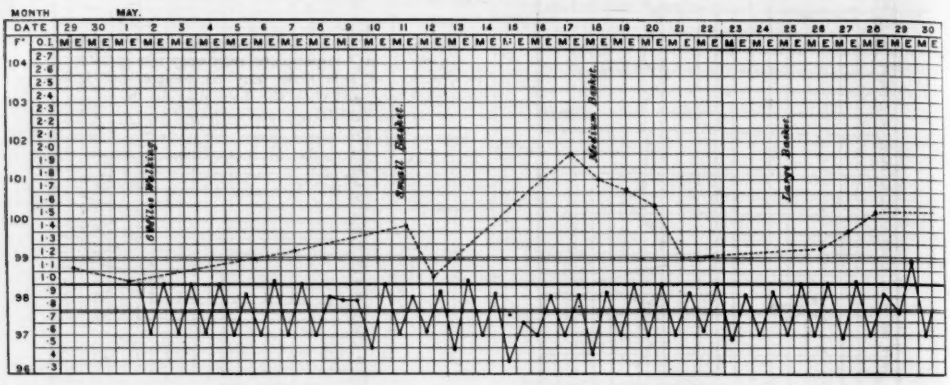
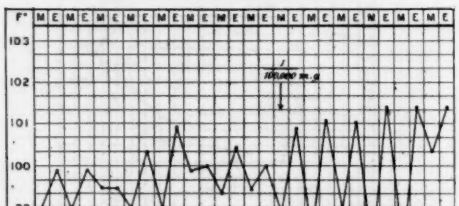


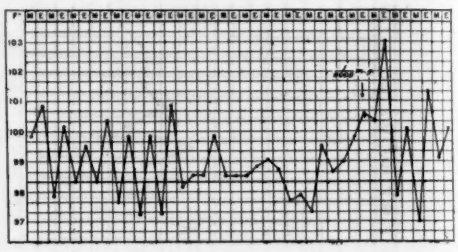
Chart showing the effect produced on the temperature and opsonic index in the case of a patient (the same as Chart 16) by graduated labour at the Frimley Sanatorium. The temperature is morning and evening. The blood was drawn *immediately* after exercise.

CHART 20.



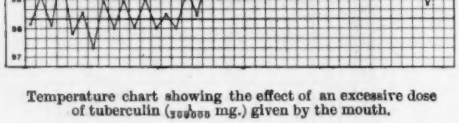
Temperature chart showing the effect of an excessive dose of tuberculin ($\frac{1}{100000}$ mg.) given by the mouth.

CHART 21.



Temperature chart (kindly lent to us) showing the effect of an excessive dose of tuberculin ($\frac{1}{80000}$ mg.) given by the mouth.

CHART 22.



Temperature chart showing the effect of an excessive dose of tuberculin ($\frac{1}{100000}$ mg.) given by the mouth.

CHART 22A.

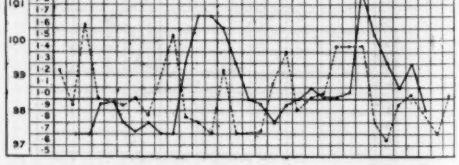
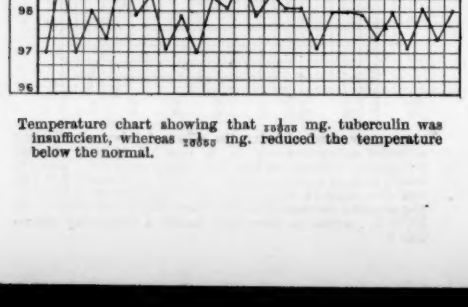


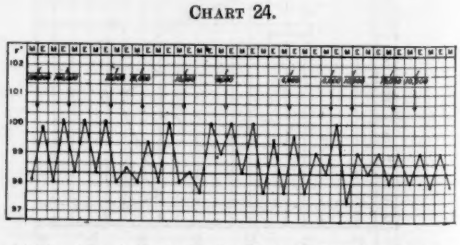
Chart showing the effect of an excessive dose of tuberculin B.E. ($\frac{1}{10000}$ mg. and $\frac{1}{1000}$ mg.). In this case it was subsequently found that a dose of $\frac{1}{1000}$ mg. B.E. kept the temperature "flat" and subnormal.

CHART 23.



Temperature chart showing that $\frac{1}{10000}$ mg. tuberculin was insufficient, whereas $\frac{1}{10000}$ mg. reduced the temperature below the normal.

CHART 24.



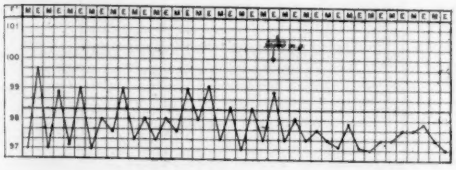
Temperature chart showing the effect of tuberculin. It will be noticed that doses of $\frac{1}{100000}$ mg. produced no effect, whereas a dose of $\frac{1}{10000}$ was followed by a lowering of the temperature.

in sputum. Right kidney painful. In the urine pus and tubercle bacilli. *Tuberculin*:—1-10th mg.—100 mg. of old Tuberculin Koch; 1 mg.—40 mg. Tuberculin (B.E.). On discharge from the Sanatorium no Tub. bac. in sputum or urine. Quite well. No cough or expectoration. She was taken back as teacher and has taught continuously since then without any breakdown. Tub. bac. have never since been found, although numerous examinations have been made.

With a view to co-relating these large doses with the, in comparison, infinitesimal doses we have been employing, a few cases of afebrile pulmonary tuberculosis were treated on similar lines, and frequent determinations of the opsonic index were made. That is to say, we have given an increasing dose by the mouth or subcutaneously every 48 hours, unless any particular dose had caused a rise of temperature or other bad symptoms, until as much as 10 milligrammes had been given as a dose. The following charts (14, 15, and 16) are instructive.

A careful study of these and other similar charts leads us to the conclusion that although good results are obtained in a

CHART 25.



Temperature chart showing the effect of an appropriate dose of tuberculin ($\frac{1}{20000}$ mg.).

limited class of case by gradually increasing the dose of tuberculin to very large amounts, these large amounts are often unnecessary. The opsonic curves show that after a time a particular dose is reached (e.g., 2-10th milligramme in Chart 16) which gives an excellent positive phase, and that the subsequent increase of dose is not attended with such good results. If we take the opsonic curve as representing accurately the immunity curve, it is obvious that the best method of administering tuberculin is progressively to increase the dose until a prolonged positive phase is produced by a particular dose (as is shown by the opsonic curve and by the "flattening" of the temperature), to repeat this dose as soon as its effect has begun to wear off (as is shown by a lowering of the opsonic curve or a wider fluctuation of the temperature), and when this dose fails to produce its former effect to increase it. Good results will at the most be but rarely obtained by a routine increase of the dose, if a rise of temperature is taken as the only indication that the dose should not be further increased. The method is fundamentally unscientific and can only be suitable for rigidly selected cases. In any case we are convinced that this mode of administering tuberculin is only advisable in chronic afebrile cases in which the disease is "localised." Irreparable harm may be done if it is indiscriminately applied.

A very short experience of the administration of tuberculin will convince everyone that no hard-and-fast method can be adopted and that the dose given must be determined separately for each case. The dose given must bear a definite relation to the amount of auto-inoculation either spontaneously occurring (febrile cases at rest) or artificially induced (afebrile cases up and about). In a few cases it is possible to commence with a small dose and by increasing it at short intervals to reach eventually very large doses such as 10 or 20 milligrammes with benefit and without ever causing any rise of temperature. In most cases, however (if this method is adopted), a dose is reached which causes a rise of temperature. The dose which does this varies with each patient: in some it may be as little as 1-100000th milligramme, in others 1-20000th milligramme, 1-1000th, 1-200th, 1-30th, or 1 milligramme, &c.

When a dose which produces these effects is given it is found sometimes that a repetition of it, after a proper interval, causes a slighter elevation of temperature. If it is again repeated after a proper interval it may again produce a rise of temperature, although a smaller one, or it may cause no rise of temperature. In the latter event it is often possible to continue to increase the dose without causing any rise of temperature until very large doses are reached, or it may be that after the dose has been increased to a further point a further rise of temperature is caused. Thus 1-10th milligramme may cause a temperature to 102°; if this dose is given after an interval of a week the temperature may only rise to 100°; a further repetition of this dose may be unattended by any rise of temperature, and then the dose may be increased gradually to 10 or more milligrammes without harm, or it may be found that one of the larger doses, e.g., 1 milligramme, will cause a temperature elevation of temperature whenever it is given. This hyper-susceptibility is shown in Charts 17 and 18.

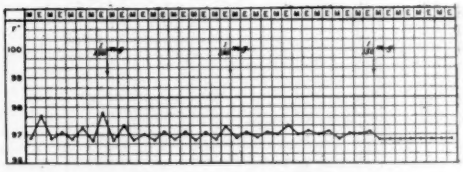
Ritter[8] gives the following as a typical example of these cases:—

A patient with pulmonary tuberculosis (Turban Stage III.) was treated with good effect with tuberculin (B.E.). Treatment began with a dose of 1/1000 mg., and this was increased to 10 mg. without serious contra-indications. Then intolerance to the dose appeared: 10 mg.; 20 mg., temperature 39·8° C.; 10 mg. 39·3° C.; 5 mg. 38·3°: 1·0; 1·5; 2·0; 2·5; 3·0; 4·0 mg.; 39·0° C. ..... six weeks' rest ..... 1·0; 2·0; 3·0; 4·0 mg.: 39·2° C.; one week's rest ..... 3·5; 4·0; 5·0; 6·0 mg. ..... etc., without reaction up to 200 mg.

Exactly the same phenomena are found to occur when a patient is treated by means of his own tuberculin, the dose being regulated by exercise. In many cases it is safe to increase the amount of exercise gradually to 20 mile walks a day or to hard navvy work. In others a walk of a few yards or a mile is at first attended with fever. A repetition later of the same amount of exercise often causes a smaller rise of temperature, or in some cases it is now possible gradually to increase the exercise to 20 miles without causing fever. In many instances an amount is reached, say three miles, which again produces fever. Chart 19 shows the effect of the patient's own tuberculin, the dose of the latter being regulated by graduated labour.

The dose of tuberculin.—The great difficulty is to know with what dose to begin. From a consideration of the observations we have made it would appear that, as a general rule, we can commence with a dose (in adults) of 1-50,000th to 1-20,000th milligramme by the mouth in acute cases of pulmonary tuberculosis and with a dose of 1-10,000th in chronic cases. It is, however, important to remember that in certain instances even these small doses may do harm and cause a rise of temperature. When this occurs much smaller doses should be given if the treatment is continued. In acute cases the dose must be increased much more slowly than in chronic cases. An excessive dose causes a rise of temperature (Charts 20, 21, 22, and 22A). If this rise lasts a few hours only, a slightly

CHART 26.

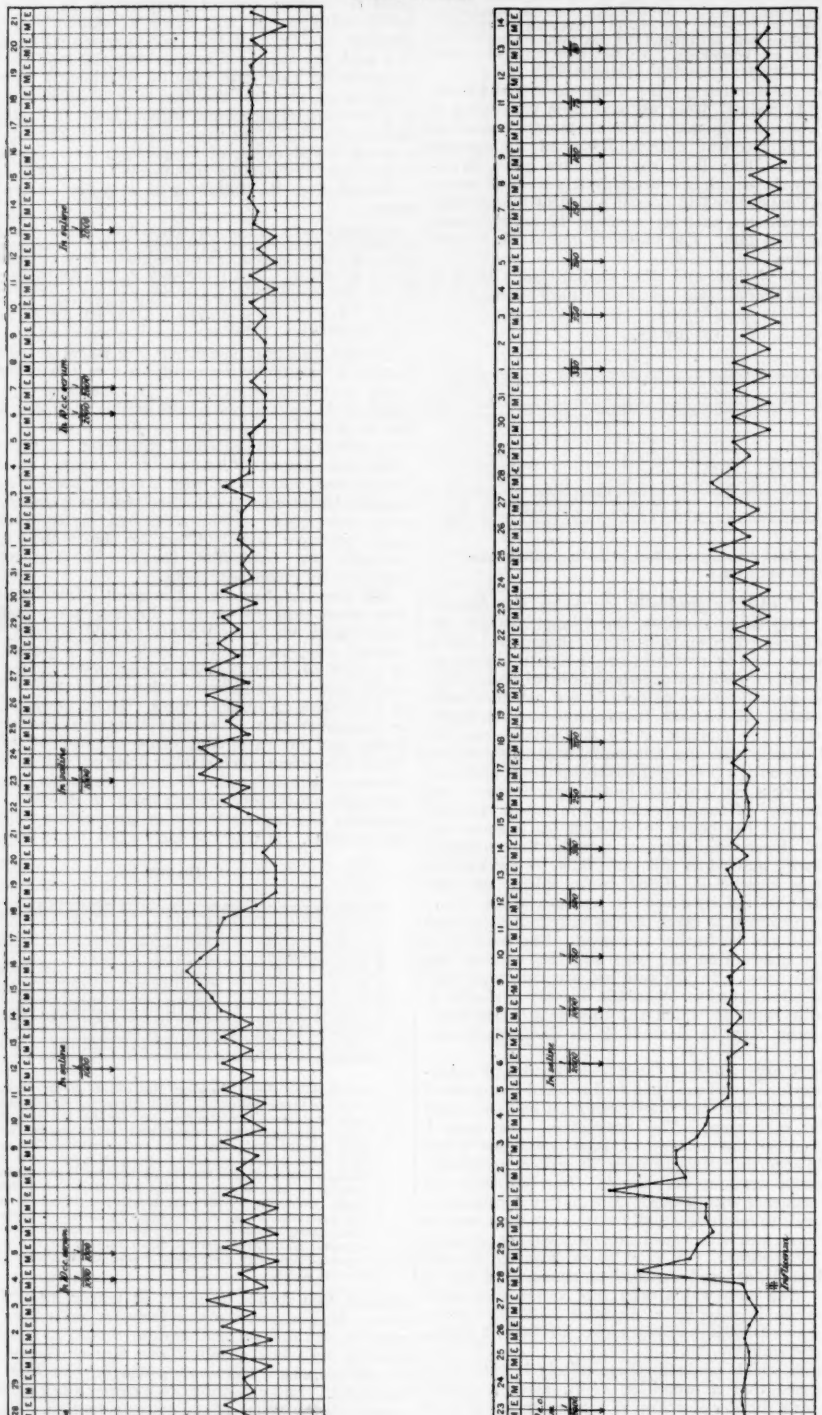


Temperature chart showing the effect of an appropriate dose of tuberculin ($\frac{1}{10}$ mg.) given by the mouth. It will be noticed that the first dose limited the daily fluctuation and that the second and third doses caused a still greater flattening of the temperature. The curve is that of a patient who, in spite of the fact that he had had nearly a year's treatment at two sanatoriums, was unable to take active exercise without a rise of temperature. Coincidently with the treatment with tuberculin he has been able to walk 6 to 7 miles a day without the temperature rising above 98·6°. In the last examination of the sputum no tubercle bacilli were found; in the previous examination only four were found in a search through several slides.

smaller dose should be given, at proper intervals, for some time. If, however, the rise lasts for some days in spite of absolute rest a much smaller dose should be given. An inefficient dose has no effect one way or the other (Charts 23 and 24), and accordingly a dose of this kind should be increased. An appropriate dose causes a fall of temperature or reduces the extent of the daily fluctuation. (Charts 23, 24, 25, and 26.) The fact that the effect of such a dose is passing off is shown by the temperature again rising to a higher level or by the reappearance of more marked daily fluctuations.

[8] Loc. cit.

CHART 27–27A.



Temperature chart showing the "flattening" effect of tuberculin administered by the mouth in a case of chronic pulmonary tuberculosis complicated by numerous tuberculous lesions of the skin. It will be noticed that when tuberculin was omitted the daily fluctuations became greater, and when tuberculin was resumed on June 1st no "flattening" effect was produced until $\frac{1}{100}$ mg. was reached, the patient having previously been accustomed (May 18th) to $\frac{1}{5\frac{1}{2}0}$ mg. The rise of temperature on May 28th is attributed to influenza, as two other persons in the same house were at the time suffering from this complaint. The patient's present condition is good and the tuberculous lesions of the skin have disappeared.

(Chart 27.) When an appropriate dose causes an effect of this kind it should be repeated as its effect wears off, and should not be increased until it becomes evident that its effect on the temperature is lasting for a shorter time. Thus a dose of 1-1000th milligramme may at first produce "flattening" of the temperature for a week, and at some later period its effect may last only two or three days; when this occurs 1-750th milligramme should be given.

Serum.—In our previous communication we touched upon the value of fresh horse serum in conjunction with tuberculin as a therapeutic agent. The clinical value of this serum has been tested in a number of cases but no further laboratory experiments have been conducted in this direction. We may, however, mention that in our experience a dose of tuberculin in 10 cubic centimetres of serum is less likely to cause a rise of temperature than the same dose in 10 cubic centimetres of saline solution.

Conclusions.—1. Tuberculin may be given with effect by the mouth or rectum or subcutaneously. The dosage is dissimilar, but animal experiments, opsonic curves, and temperature charts show that the effects produced are the same.

2. The administration of tuberculin meets with little, if any, success so long as successive auto-inoculations spontaneously occur and cannot be limited by the means at our command. *Absolute* rest is the most efficient means for limiting auto-inoculation.

3. The administration of tuberculin may be adequately controlled in a large percentage of cases of pulmonary tuberculosis by a careful daily observation of the temperature and clinical condition of the patient on the lines indicated above.

4. In cases of difficulty valuable information may often be obtained from an examination of the opsonic index.

5. The German method of the routine administration of tuberculin by gradually increasing doses at stated intervals is not to be recommended. It is only satisfactory in a very limited class of case, and even then may not lead to the best results.

6. Tuberculin is a dangerous drug and its administration requires considerable experience. It is capable, when given improperly, of producing disastrous and even fatal results.

This research would have been impossible but for the courtesy of Dr. Robert Maguire and Dr. Hector Mackenzie who have unreservedly placed their beds at our disposal. It is difficult for us to express adequately our gratitude to them. Our thanks are also due to Mr. Olliver Bruce who has acted as assistant in the laboratory, and has ungrudgingly given us great assistance throughout this investigation. Part of the expense involved has been met from a fund kindly collected by Dr. R. A. Gibbons for the investigation of the value of tuberculin and other vaccines.

SOME UNUSUAL SEQUELÆ OF CONVULSIVE SEIZURES IN CHILDHOOD.

BY F. J. POYNTON, M.D.LOND., F.R.C.P.LOND.,
PHYSICIAN TO OUT-PATIENTS AT THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, AND ASSISTANT PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL, LONDON.

THE subject of convulsions and epilepsy borders on the commonplace, and if it were not an intensely practical one it would hardly justify this article. It happens, however, that for the last seven years I have been interested in following the history of the many cases of epilepsy and eclampsia which come to the out-patients' department, and I have been kindly assisted by Dr. R. O. Moon, Dr. G. S. Keeling, Dr. J. A. H. Brincker, Dr. W. Sweet, and Dr. H. P. Crampton in recording some of the most remarkable occurrences that have come to our notice. Dr. Moon[1] in two papers already published in THE LANCET, and Dr. Keeling[2] in one published in the *Journal of Children's Diseases* have already dealt with some of the aspects of these cases, and in this article I hope to bring forward a few points which I hardly think are generally known, although doubtless they are recognised by those who have particular knowledge of children's ailments. There must, one feels, always be floating round special hospitals fragments of experience and knowledge which at the time excite passing observation and are then tacitly accepted, but which sometimes drift but little into the general stream of recognition. I believe my first cases are of this nature. They are examples of epileptic attacks which appear to be of a usual type, but which are later followed by acute jaundice and sometimes death with many of the symptoms which we associate with acute yellow atrophy of the liver. They are, there is little doubt, dependent upon congenital syphilis, and if we examine the symptoms separately there is not one which will not be recognised as a manifestation of that taint; it is, however, in the sequence of events that the particular interest lies.

It will, I think, emphasise this point more clearly if, before I give a short account of three cases, I mention one example in which the sequence was reversed, in which jaundice appeared first, to be shortly followed by convulsions, and in which everyone will recognise congenital syphilis.

CASE 1.—A male child, aged four and a half months, developed six days after birth jaundice with green motions. This persisted and about the fourth week "snuffles" developed. In the ninth week convulsions commenced, occurring at first three times a day and later twice a week. This child was marasmic, the liver was enlarged, and the mental state was rapidly degenerating into idiocy at the age of four and a half months. In this case everything pointed to widespread syphilitic disease and there was a parental history also of miscarriages and stillbirths.

CASE 2.—The second case illustrated the more puzzling sequence of events. A boy, aged nine and a half years, was brought to hospital in October, 1904, for "fits." These had commenced at the age of nine years and had averaged in frequency one "fit" a week. There were both major and minor attacks and in the former there was loss of consciousness with convulsive movements of the right arm. Both parents were alive and in good health and were teetotalers. There was no family history of epilepsy. One sister had died from "meningitis." The boy himself was mentally backward, but morally his condition was satisfactory. Treatment with bromides was adopted with the result that the major attacks disappeared. Four months later, however, the minor attacks still persisted and urethane was tried, after which he improved and only occasional slight attacks were noticed. He then stopped attendance, but 16 months afterwards, in July, 1906, he was brought back to me on account of dropsy. I found then that he was very ill; his liver was enlarged and there were ascites and jaundice. It appeared that four days previously he had lost his appetite and had complained of pain over the hepatic region. I also discovered, too late unfortunately, what I had previously overlooked, that he had peg teeth and scars at the angles of the mouth. He was at once admitted and I am indebted to Dr. A. E. Garrod for permission to make use of the further notes of his case. In hospital vomiting, delirium, and fever developed, and later nystagmus, squinting, and diplopia. Paracentesis abdominis was necessitated, soon after which he died comatose. There was bile in the urine.

The post-mortem examination showed a greatly enlarged, smooth liver, with a thickened capsule, which on section showed mottled red and yellow areas. The spleen was enlarged and firm, scarred on its surface, and surrounded by adhesions. The kidneys were firm. The brain showed chronic meningitis. Microscopical examination of the liver showed destructive and atrophic changes in the cells but no *fibrosis*. The condition was one of acute parenchymatous disease of the liver. The kidneys showed an early interstitial nephritis and the radial, renal, and coronary arteries endarteritis obliterans. There was some optic atrophy.

The sequence of events in this case was, first an eclampsia indistinguishable in character from idiopathic epilepsy, then improvement, and lastly about two years from the time of his first visit, an acute hepatic illness with meningeal symptoms. The post-mortem lesions were those associated with syphilis.

CASE 3.—This case illustrates the same sequence. A boy, aged ten years, was brought to the hospital for the first time in March, 1904, for "fits." These had commenced three years before and their onset was attributed to a fall on the back of his head. They occurred about twice a month, were not preceded by an aura, and consisted in slight twitchings

[1] THE LANCET, Dec. 24th, 1904, p. 1778, and Sept. 15th, 1906, p. 721.
[2] British Journal of Children's Diseases, April, 1907.

of the hands and face followed by unconsciousness and sleep. This boy was one of six children, all the rest being, it was said, in good health. There was no history of alcoholism or syphilis in the parents who reported that he had become mentally backward and morally deficient since the first fit. No good results were obtained by the use of bromides or of bromides and borax, but slight improvement was attributed to urethane. At the end of 1904 I lost sight of the patient, but in September, 1905, he was brought to me because during the last four weeks he had seemed generally ill, had vomited, and his abdomen had swollen. As in the preceding case I found him very ill, but there was no obvious jaundice, although bile was present in the urine. The liver was enlarged and firm and there was ascites. He was admitted and he died a week later. The symptoms were fever, vomiting, and meningism, which after paracentesis of the abdomen terminated in coma and death.

The post-mortem examination showed chronic meningitis with advanced endarteritis of the vessels of the circle of Willis. The liver, both macroscopically and microscopically, showed parenchymatous changes as in the previous case. The spleen was large and firm and was surrounded by adhesions. The kidneys were firm and they showed epithelial destruction.

This case was almost a duplicate of the previous one, except that here there was no evidence of syphilis during life. It resembled the first in the age and sex of the patient and in the prolonged history of fits before the fatal hepatic illness which was rapid in development and acute in its course.

I am indebted to Dr. F. S. Langmead and to Dr. J. G. Forbes for the pathological findings in these two cases.

CASE 4.—The next case illustrates, I think, a warning of the same sequence of events, but as the child is still alive and the condition was quite a passing one, I only put it forward as suggestive. A boy, aged seven years, was brought to the hospital in August, 1904, for "fits" from which he had suffered for three years. In this instance there was a history of "fits" on the maternal side, and his mother admitted that she had suffered from syphilis. This boy, as in the preceding case, had seemed dull and backward since the first attack. There was apparently nothing unusual about the fits, which were of the major type, but headache was a prominent symptom not noticeable in the other two cases. There was no optic neuritis, and this is still the case. Bromides relieved but did not quite stop the attacks. In December, 1906, more than two years later, he suddenly developed jaundice with pale stools and bile in the urine. His liver then became palpable. Fortunately this symptom rapidly passed off, although I was quite prepared for a repetition of disaster. Naturally I am inclined to think that the antisyphilitic treatment which I pushed then, combining mercury and iodide, helped recovery, although as this is the only case which I have to bring forward in support of this view it must be left open to opinion, for it is of course possible that this was an intercurrent catarrhal jaundice. Later in 1907 mercurial treatment was intermitted and a fungating ulcer appeared on the right calf, which was thought to be the result of the bromide treatment. A return to mercurials promptly cured this ulcer. Since that time until the present date the most interesting feature to me has been the variable mental state. Waves of mental dulness seem to pass over the child, which, although possibly in part due to the bromides, are certainly not entirely a result of this drug. The fits still occur at intervals.

This association of convulsions and acute hepatic disease is one of some clinical interest and certainly of therapeutic importance. It is unusual and not very generally recognised, and on this account I have ventured to record the salient features of these cases as a contribution to the study of hepatic disease in childhood. It may be again emphasised here that these were not cases of chronic hepatic disease with fibrosis but of acute disease of the liver cells.

There is always a danger of overlooking congenital syphilis in cases of epilepsy, although the association has been thoroughly recognised, and these cases may help to emphasise how far the effects of the congenital disorder may reach. It is possible that the actual cause of the final hepatic illness may have been some added infection, and upon this point, except the suggestive incident in the last case of recovery while under treatment with mercury and iodide, I have no evidence to put forward for the treponema was not sought for in the fatal cases in 1905 and 1906. Yet even if this were the case there is good reason to believe that the alteration in the constitution from the normal produced by congenital syphilis predisposed to such a rapid and fatal illness of so unusual a character.

The next two cases illustrate an interesting event, but the absence of a necropsy must necessarily limit their scientific importance. These are cases which I fancy are syphilitic and in which a hemiplegia occurs first on one side and then on the other, with a considerable interval between the two attacks.

CASE 5.—A male child, aged two and three-quarter years, when three months old was seized with a series of severe convulsions followed by unconsciousness lasting according to his mother's account for six weeks. On recovery he was found to be paralysed on the right side. There gradually followed such improvement that although the right arm remained weak and spastic and the reflexes on the right side exaggerated he nevertheless learnt to walk and to talk a little. Two years later, in February, 1908, after complaining a little for some days of headache and while he was sitting in his perambulator throwing bread to the ducks in a park, he fell back powerless but not unconscious. His face was drawn to the right and the left arm was powerless. He was totally unable to speak or to swallow and the muscles of his back were useless. I saw him ten days later when there were slight return of power in the left arm and leg and curious choreiform movements of the left arm and leg and neck. The left leg was only slightly paralysed. This paralysis, as in the first attack, was of the upper motor neuron type. He is still under my care and can now sit up a little. He is quite unable to walk and his mental state is apparently much enfeebled, although his inability to say anything but the simplest sounds makes it difficult to gauge the extent of mental defect. This boy's heart was quite healthy and negatived any idea of embolism.

Case 6 was in some respects more remarkable than the one just narrated but there were no convulsions.

CASE 6.—A child, aged two years and four months, was being bathed on the morning of August 31st, 1907, and when taken out of his bath and put on the floor his mother noticed that his right leg was weak. Ten minutes later when taking his breakfast the spoon dropped and his right hand and arm were found to be powerless. His mother remarked that at the time his hand went white and cold. There was no warning of this attack. This patient was admitted under the care of Dr. A. F. Voelcker and was found to have a flaccid paralysis of the right arm and leg, with increased reflexes and extensor response. The left external rectus was noted to be a little weak. There was no optic neuritis and lumbar puncture threw no light upon the cause. There was some fever, but it was not characteristic, and the mental condition was one of irritability with gradual recovery. There was no cardiac affection. Six weeks after leaving the hospital, and when he had recovered sufficiently to walk again, the child was discovered one morning to be paralysed on the left side. Previously to this there had been occasional vomiting for a few days. Both leg and arm were affected. He was brought to me for this on Nov. 13th, 1907, six days after the attack, and was once more admitted. This time unless disturbed the boy lay quite drowsy and quiet; if roused he became exceedingly irritable. There was no fever. The temperature was at first subnormal. No cranial palsies were noted. The reflexes on both sides were increased and an extensor response was still obtainable on the right side. Again there was gradual recovery and when I saw the child in September of this year he had become fat and had improved remarkably. There had been no convulsions and his upper extremities had recovered their power to a great degree, although his mother noticed that if he was startled or spoken to suddenly his left arm went "stiff" for two or three minutes. He could not walk and both legs were very cold. Both knee-jerks were much increased and on both sides an extensor response was elicited. His mental state appeared to be fair, his mother not noticing anything unusual except that he has not been able to talk and can only make a few elementary sounds.

My reason for suspecting congenital syphilis which had presumably caused sudden vascular lesions in Cases 5 and 6 was the family history. In Case 5 there had first been a miscarriage, then two premature dead children, then a child

who died in convulsions on the third day, then the patient, and lastly an infant who appears to me at present to be slightly rachitic but otherwise healthy. In Case 6 there was first a miscarriage at six and a half months, then a child who died on the fifth day from hæmorrhage from the umbilicus, and then the patient, who at three months was treated by "grey tabloids" and "black ointment" for "snuffles" and a rash.

Such cases as these (Cases 5 and 6) are undoubtedly rare and when at this early age one speech centre has been damaged in infancy, and the other upon which reliance must be placed for compensation is in turn injured shortly afterward, the outlook must be most serious. The condition of pseudo-bulbar paralysis that is produced immediately after the second attack forms a striking clinical picture. The close resemblance in the clinical course of the two cases is very striking, and it is also interesting to find how well nourished the patients have become and apparently healthy in their general appearance. Case 5 presents this point of difference—that epileptiform attacks still continue and the mental outlook is very gloomy. In some respects the sudden seizures of this patient remind one of the sudden cerebral attacks met with in the general paresis of adults, but it may be added that in both these cases the pupils are equal and react well to light and to accommodation.

The diagnosis is not an easy one and the interpretation I have given of these two cases may not be correct. The temptation, apart from the ever existing one of tuberculous meningitis, is to call the condition one of polio-encephalitis superior, and this I thought to be the diagnosis in Case 6 at the time of the first illness. When, however, another attack occurred within three months on the opposite side of the brain this seemed to be negatived, for it hardly appears possible that two such attacks could occur so close together in the same child. A feature which attracts attention is the remarkable absence of severe illness at the time of some of these attacks and if there had been any cardiac affection it would have been most tempting to have ascribed the illness to cerebral embolism.

The third group of cases in which I have been particularly interested is one in which after severe convulsive attacks children show most curious rhythmical movements which may be unilateral or may involve the whole body. It is not my intention to attempt to enter deeply into the explanation of this condition, for my experience of such cases is too limited to do more than point out the clinical features which have struck me in common with other observers, to touch upon their bearing in prognosis, and possibly to assist some who have not had their attention directed to this particular class of case.

In the absence of a necropsy I do not feel myself competent to localise the lesion or lesions which were present in these cases. Guided, however, by the writings of Dr. Gordon Holmes on tremors in organic cerebral diseases and Dr. F. E. Batten upon ataxia in childhood I incline to the belief that the illness was in each case probably the result of an acute infection akin to that of acute anterior poliomyelitis; in other words, that it was a polio-encephalitis. It also appears to me that the character of the movements fits in best with those described in Holmes's paper as the result of lesions of the tegmental portion of the mid brain. This writer quoted from the experimental investigations of Ferrier and Turner upon section of the superior cerebellar peduncle in apes. A rhythmic movement occurred which in the words of the authors was as follows: "Except when quite at rest a constant tremor was observed in the homolateral arm and leg which passed into large oscillations on voluntary effort." This description might be aptly applied to the movements that were present in these three cases.

CASE 7.—A male child, aged 11 months, was admitted on July 23rd, 1906, to University College Hospital. This child had been quite healthy until July 19th, when after an attack of convulsions he was found to be paralysed on the left side. Up to the time of admission he had been breast fed and there was nothing of importance in the family history. When admitted he was partially unconscious. There were no ocular paralyses. The left arm and leg were somewhat rigid, but the features of the case were slow rhythmical movements of the left arm and to a greater degree of the left leg. In the upper extremity there were flexion and extension at the elbow and pronation and supination of the forearm. The left knee-joint was slightly flexed and there were on the least disturbance continual movements of flexion and extension involving the whole limb. On admission the temperature was normal.

This case was complicated by an intercurrent pneumonia but in the middle of August the rhythmic movements had disappeared and only some weakness of the left arm and leg remained. In September the paresis had also disappeared and the child had apparently quite recovered. I have not been able to follow his further history.

CASE 8.—This patient was a female child, aged one year and four months. Six days before admission to University College Hospital on August 15th, 1908, she had been suddenly seized with acute vomiting after taking the breast. On the next day persistent convulsions commenced and squint was also noticed. There was no point in the family history of importance. When admitted the child was quite unconscious. There was divergent strabismus and both pupils reacted sluggishly. All the reflexes of the limbs were obtained and were not exaggerated. Kernig's sign was equivocal. Some retraction of the head was noticed and curious rhythmical flexion and extension movements of the left arm and leg were present. Three days later a condition of semi-stupor was present and the rhythmic movements were much more extensive, affecting the head, arms, and legs. There were oscillatory movements of the head; flexion and extension, and pronation and supination of the upper limbs; and flexion and extension with some circumduction of the lower limbs. These strange movements, always rhythmic, became quite violent and then gradually diminished, but were present in the middle of September, by which time consciousness was fully restored. No optic neuritis was present and lumbar puncture yielded a clear fluid which appeared to be normal and was negative on culture. The movements as recovery proceeded only became evident upon disturbing the child.

This case was a much more severe one than Case 7 and at the time of writing recovery is not quite complete. Throughout the course of the illness there was considerable rigidity of the neck and at one time there was apparently great pain on any attempt at overcoming this rigidity.

CASE 9.—The patient was a female child, aged one year and one month. Five days before admission, under the care of my colleague Dr. H. Theodore Thompson, to the Children's Hospital, Great Ormond-street, on Sept. 7th, 1908, she had been seized with convulsions which had continued until the 7th. There was a history of some convulsions five weeks previously which had passed off, and "something wrong" had been noticed with the child's eyes for the past month. This infant was rachitic. She was conscious on admission. Both sixth nerves were weak, the right being particularly so, and both pupils reacted very feebly to light. Dr. R. H. Miller noted also some weakness of the right seventh nerve. The other features of the case were constant rhythmical movements affecting all four limbs, the trunk, and the head. These were of the same slow, regular character as in the other cases, but never so violent as in the preceding. The reflexes were weak. The mental condition was fair and the child apparently not in pain. As in the preceding case the movements were increased on disturbance and on voluntary movement. There was no nystagmus in this or in the two preceding cases.

The abrupt and stormy onset of the illnesses in these three cases (Cases 7, 8, and 9) may naturally suggest a meningitis, but seeing that one of the patients made an excellent recovery and the other two are on the fair road also it is clear that the prognosis as to life is a more favourable one. Other physicians who have mentioned such cases to me have commented also upon their recovery. Again, in the two cases in which lumbar puncture was undertaken the cultures were negative and these results form a contrast to the results in two obscure cases of cerebral illness under my care at University College Hospital at the same time as the last two of this group. In both these cases lumbar puncture resulted in a turbid fluid containing a meningococcus, and they proved to be cases of post basic meningitis. Recognition of the rhythmical movements which appear when consciousness is being regained, and particularly when the children begin to resent movement, will make one at once cautious in diagnosing meningitis and the occurrence of ocular palsies will also add to this caution. These cases again did not lose flesh in the same way that children do as a rule in meningitis.

Leaving now these three groups of cases, I conclude with a few desultory remarks upon clinical points which are of some practical importance. One of these is the occurrence of convulsive attacks in tuberculous meningitis. There were three types, all of which were exemplified in my series. The first and most usual is the supervention of convulsive seizures during the course of the illness. The second type is more perplexing and less frequent: the occurrence of convulsions as the first convincing sign of the fatal illness. In such cases there may be a series of attacks, a status epilepticus, bringing the child to the verge of death, followed by remarkable recovery for a while, and then the gradual development of all the classical signs of fatal tuberculous meningitis. The third and most confusing type is the occurrence of tuberculous meningitis in an epileptic. Recently I had a striking example of this occurrence in a little girl who had been treated, with gradual improvement, for many months for ordinary epileptic attacks. She was, however, brought up on one occasion earlier than usual for a sudden recrudescence of the "fits" and for this bromides were pushed. Dr. Crampton, who was watching this case for me, pointed out that the child had become drowsy and this at first we attributed to the bromide treatment. Fortunately, we discovered pyrexia, headache, and slight double ptosis which with vomiting made us suspicious, and she was admitted to the hospital. Ten days later she died from acute tuberculous meningitis. Two other cases occurred in the series and in all there has been the greatest danger of mistaking the fatal meningitis in its early stages for an exacerbation of the epilepsy, for doubtless there is an increased irritability of the brain in such circumstances.

I should like to emphasise, as has Sir William R. Gowers in his recent fascinating book "The Border of Epilepsy," the difficulty there may be in distinguishing syncopal attacks and minor epilepsy. There have been several cases in which this has been most puzzling. The most perplexing of all was the case of a child with congenital morbus cordis. The lesion was obvious enough and of sufficient severity to make it most reasonable to suspect that syncopal attacks might occur, and yet careful repeated inquiry and on one occasion observation made it almost certain that the particular attacks were epileptiform in character. There was a sudden complaint of pain in the chest and an instinctive run to her mother in alarm, then pallor and momentary loss of consciousness. The recovery was so rapid and the attacks at one time were so frequent that I believe them to have been epileptic, although more benefited by general tonics than bromides.

The treatment of epilepsy is a well-worn theme, but the value of bromides has been so differently appraised by various authorities that every independent opinion carries with it a certain usefulness. What has struck me has been the comfort with which epileptic children take these drugs. With very few exceptions I do not seem to have seen any deterioration of health from their use, and when I have thought there have been mental dulness and loss of appetite these cases have proved sometimes to be examples of eclampsia and not idiopathic epilepsy. Eruptions have been quite exceptional and in my experience most likely to occur in marasmic children suffering from epileptic attacks the result of gross organic brain disease—cases, for example, of cerebral diplegia or convulsions after meningitis; in these small doses have sometimes rapidly produced a rash. The severe fungating sores have not occurred at all.

It appears to me also that the bromides are at this early age distinctly curative, because—admitting that untreated epilepsy may also quiet down and disappear—there have been many instances of steady improvement directly following the commencement of a course of the drugs. I confess to great faith in them, not merely as dampers of the fire of the disease, but as aiding to counteract the mysterious tendency observed in many nervous affections to persistence of a symptom when once established. Yet with this belief I find myself in considerable difficulty as to the best plan to adopt in convulsions arising in infancy. I can but confirm what has been repeatedly pointed out in recent years, that when confronted with an infantile convulsion no one can with confidence affirm or deny that it may be the first event in an epilepsy. My notes show that in some cases the condition repeats itself from that moment; that in other cases, after a considerable lapse of time, sometimes years, epilepsy supervenes, while in other cases indistinguishable in character no recurrence has been noticed. There can be no doubt that a great number of these last cases never reach hospitals at all and that the natural view of a hospital physician is an alarmist one. In spite of this, however, it must be admitted that there is no sure guide in prognosis. The attitude that I have adopted has been to weigh the evidence in each particular case. Have the convulsions, for example, had some very real excitant, such as foolish feeding or excitement during the troubles of dentition or rickets? Is there a doubtful family history? Have the convulsions commenced suspiciously late in childhood? In this way some judgment may be formed as to whether the condition may be looked upon as the result of an unfair strain on the delicate nervous organisation of the child, or, on the other hand, as evidence of an unusually susceptible nervous system. If the latter appeals to me I give a course of bromides, guided by the general behaviour of the case, and if the former I have been content to continue the treatment only until I feel sure the passing disturbance is thoroughly corrected. In all cases, however, I avoid the mere exhibition of the drug for the moment of anxiety and then its abrupt discontinuation. It need not be emphasised that the general remedies in vogue for infantile convulsions have also been used. I have no new points to make about the methods of exhibiting bromides in epilepsy. Each case requires individual attention. Free salt has been restricted but I will not vouch for strict obedience to that rule. Meat has been curtailed but not debarred. For sudden outbursts of epileptic fits no remedy seemed better than admission to the hospital. It is remarkable how the rest, altered surroundings, discipline, and regular diet influence many of these cases, which, if the parents are to be believed, are at home having repeated attacks day and night. I can only confirm what others have insisted upon, that constipation must always be avoided, and that it may greatly intensify the condition.

In conclusion, I have to express my thanks to Dr. Garrod and Dr. Voelcker for their permission to use the observations that were made on the cases which were under their care in the Children's Hospital, Great Ormond-street.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF SCURVY RICKETS OCCURRING IN A BREAST-FED CHILD.

BY THOS. H. KELLOCK, M.D. CANTAB., F.R.C.S. ENG.,
SURGEON TO OUT-PATIENTS AT THE MIDDLESEX HOSPITAL; SURGEON TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, W.C.

THE rarity of scurvy rickets occurring in entirely breast-fed children would make it appear to be worth while recording the facts in the following case. Here the only two children in a family suffered from the affection, the one whilst being fed artificially and the other when at the breast. The mother is an intelligent woman and the histories as given by her can I think be entirely relied on.

About 18 months ago a female child, then aged 11 months, was brought to me at the Middlesex Hospital on account of swellings in both forearms and legs. She was the first child of the parents who were healthy people, aged 27 and 29 years respectively. There had been no miscarriages and there was no history pointing to syphilitic affections on either side. The parents were poor, but the mother stated that whilst she was pregnant she had had plenty of good food, but that she was not well during the whole period of pregnancy, suffering a great deal from sickness. The child was born at full term and until she was nearly nine months of age was fed entirely at the breast; then, as she did not appear to be thriving, she was, on the advice of a physician, weaned, and fed on cow's milk three parts (unboiled) and water one part (boiled). This did not seem to suit and for two months previously to being seen she had been having Benger's food and milk, all boiled. When seen the child was anæmic and listless; both hands were in the dropped position, reminding one

much of what is seen in the pseudo-paralysis of Parrot. Diffuse, tender, painful swellings existed on the bones of both forearms and on both tibiæ; these were said to have been present for about a week and to have caused the child a great deal of suffering. Some of the other long bones were rather tender on manipulation but no swellings other than those mentioned were noticed. There were no teeth erupted. Scurvy rickets was diagnosed and the usual treatment for that affection adopted, with the result that immediate improvement occurred and in a comparatively short time all the swellings, pain, and tenderness disappeared and the child appeared to be quite well.

Sixteen months later the woman came again with a younger child, aged ten weeks. The mother was then looking ill, anæmic, and apparently suffering from want of food. She stated that whilst she was pregnant with this child her husband had been out of work and they had been very badly off, with the result that she had been short of food. She had, however, had plenty of milk in the breasts and the child had had nothing whatever but this. When nine weeks old a swelling appeared about the upper end of the right tibia, which was tender and painful, and the leg became, in the mother's words, "quite paralysed." The child was sent to me as on its first visit to the hospital sarcoma of the tibia had been suspected. When seen the child seemed to be in fairly good condition and the only part affected was the upper end of the right tibia; here a doughy tender swelling of some size completely surrounded the bone and the child would make no effort to use the limb. Whilst in some doubt as to the diagnosis on account of the fact that the child had been entirely breast-fed, the mother reminded me of the case of her elder child who had been formerly under my care. The mother was directed to continue nursing the child but to give her as well a little orange juice twice a day, at the same time she herself was ordered a mixture containing iron and sulphate of magnesium. At this time too it must be mentioned that her circumstances had somewhat improved and that she was getting at any rate sufficient food. The result of this treatment was immediate and rapid as far as the child was concerned, the swelling on the tibia first became much less tender and in three weeks had almost completely disappeared.

The mother was closely examined as to the truth of the history of the feeding and she assured me that she had looked after the children entirely herself and had never left them to the care of others, so that the possibility of their having had food other than what she herself gave them was excluded. At my request she brought the older child to be seen. This child was then healthy and strong, showing no sign of her previous or any other affection, and the mother stated that she (the child) had not ailed in any way since she was under treatment 16 months previously.

Queen Anne-street, W.

A CASE OF RUPTURE OF THE LEFT AURICLE OF THE HEART.

BY A. W. GREIG, B.C. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.,
CAPTAIN, I.M.S.; SUPERINTENDENT, MANDALAY CENTRAL PRISON.

THE deceased was a Burman male convict, aged 24 years. In company with several other fellow convicts he was proceeding on transfer from a district jail distant from Mandalay a few hours by rail to the Mandalay central prison. According to the statements of the police escort and of his fellow prisoners he appeared to have been in his usual good health and to have made no complaint of indisposition whatsoever during the journey. From the Mandalay railway station the batch of convicts were marched a distance of about a mile to the central prison where they arrived at about 4 P.M., the afternoon not being unduly hot. While halting temporarily at the entrance of the prison it was observed that the deceased was in good spirits and was congratulating himself on his transfer to a jail in which he had previously served a term of two years; he had been released early in 1907. The formal handing over to the jail authorities was then commenced, for which purpose the outer gate was opened and the batch of prisoners marched into the lobby between the inner and outer gates. As deceased in his turn crossed the threshold he was seen to stumble and without uttering sound or cry to fall forward on to his face and to lie motionless. The hospital assistant happened to be in the prison at the time and was on the spot in a few minutes, but life was extinct—the man had evidently died instantaneously.

The post-mortem examination was carried out 20 hours after death. The body was that of an adult Burman of good physique. There were no external marks of injury. On opening the chest the pericardium was at once seen to be much distended, displacing the lungs; on incising it the contents were found to be blood-clot. The anterior portion of the sac was carefully clipped away and the clot cleared out. There was no pericarditis. The heart was empty and appeared small and shrunken. On the anterior superior aspect of the left auricular appendix there was discovered a rent, of tri-radiate shape, through which the tip of the little finger could be readily passed into the cavity of the left auricle, the wall of which was slightly puckered in the neighbourhood, as if there had been a pre-existent bulging during life. The heart was removed and the left auricle slit open at a distance from the tear, but although no undue force was used to effect this the rent was extended, the surrounding tissues being very friable. To the inner aspect of the auricular wall around the rent some recent blood-clot was adherent, but on removing this it was found that the deeper layers were partly decolourised and of firmer texture, showing that deposition of fibrin had occurred some time previous to death about the spot which eventually gave way. The deepest layers of the clot were either intimately adherent to, or had entirely replaced, the endothelial coat of the auricular wall, for on gently removing the former the muscular tissue was revealed. The rest of the left auricle, the remaining chambers of the heart, and the valves were, so far as could be seen, normal; the orifices of the coronary arteries were fully patent; there was no atheromatous change visible in the roots of the great vessels; nor was there hypertrophy or dilatation of the heart itself except in the immediate vicinity of the rupture. No gummatous deposit was found in the myocardium nor was there naked-eye evidence of subjacent fatty change. With regard to the other organs, the liver and spleen were both slightly over weight (3 pounds 10 ounces and 9 ounces respectively) but did not present any obvious morbid change; otherwise nothing at all abnormal could be found. The brain was not examined.

Rupture of the heart is a rare condition: rupture of an auricle must be a very uncommon event. Sudden death, though not invariable, is the rule (71 out of 100 cases collected by Quain). According to Osler[1] either fatty infiltration or degeneration, acute softening following on embolism of a branch of the coronary artery, suppurative myocarditis, or gummatous growth is the usual predisposing, and exertion the immediate exciting, cause. Coates, however,[2] expresses a doubt as to whether fatty degeneration alone is competent to bring about a rupture of the heart. In the case described no cause for the rupture was demonstrated, though it is probable that a more detailed and fuller search might have discovered it.

Mandalay.

CASE OF RUPTURE OF THE BLADDER DURING LITHOLAPAXY; SUTURE; RECOVERY.

BY SOMERTON CLARK, F.R.C.S. EDIN.,
SURGEON TO THE MISSION HOSPITAL, DERA ISMAIL KHAN.

A GIRL, aged two and a half years, nationality Jat, was admitted to hospital on Feb. 29th, 1908, for stone in the bladder. On March 2nd she was operated on; there was not much difficulty in crushing the stone. When 10 grains had been washed out and one or two grains remained in the bladder the bladder gave way. The abdomen was opened by a two and a half inch incision, such as is made in suprapubic cystotomy. The bladder was found to be ruptured to the extent of three-quarters of an inch on the posterior aspect; this was closed by a double row of catgut sutures; the bladder was filled with lotion and found not to leak. The abdomen was closed and two hours after the operation urine was passed naturally. The wound healed well for nine days. On the tenth day a stitch abscess was found at the lower end of the wound, and two days later another at the upper end; these caused the wound

[1] Principles and Practice of Medicine, second edition.
[2] Manual of Pathology, third edition.

to break down. The wound healed slowly as the child frequently cried. On April 9th the wound was completely healed and the parents were given permission to take the child home.

The question will be asked, How many cases of litholapaxy has the operator had? Seven in the female and about 70 in the male.

North-West Frontier Provinces, India.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

Endemic Cretinism in the Chitral and Gilgit Valleys.

A MEETING of this section was held on Oct. 27th, Dr. S. J. GEE, the President, being in the chair.

Captain R. MCCARRISON, I.M.S., read a paper entitled "Observations on Endemic Cretinism in the Chitral and Gilgit Valleys," which is printed in full at p. 1275 of our present issue.

In the discussion which followed the reading of the paper Sir VICTOR HORSLEY said it was unfortunate that operative measures were not looked upon with favour by the inhabitants of the Chitral and Gilgit Valleys, because with such an enormous amount of material it might have been possible finally to decide the question of the advisability of treating cases of cretinism by grafts of normal human thyroid. The small amount of grafting which he had done in this country had been in the case of adults. The graft of normal human thyroid could be obtained from a case where an adenoma was shelled out of the thyroid gland, the small portion of normal gland necessary for the graft being removed without any risk. He had done this with success. He was sure that if anyone had a marked case of sporadic cretinism under his care the question of grafting ought to be considered as soon as possible.

Mr. J. BERRY said it seemed to him that the conclusions arrived at by Captain McCarrison with regard to goitre in India bore out those arrived at by observers in Switzerland and other parts. Mr. Berry concluded his remarks by deploring the fact that for the last few years an immense amount of teaching had been spread abroad alleging that the parathyroids were special glands with a separate function distinct from the thyroid gland. He had hoped that the work of Dr. David Forsyth had dispelled that superstition.

After Dr. A. M. GOSSAGE, Dr. FORSYTH, and Mr. W. EDMUNDS had spoken Captain MCCARRISON replied.

PATHOLOGICAL SECTION.

A Case of Rare Disease of the Long Bones terminating in Sarcoma of the Femur.—An Investigation into some Aspects of the Action of Arsenic.—Malignant Jaundice associated with Graves's Disease.—Melanotic Deposits in Cattle and Sheep in Western Australia.

A MEETING of this section was held on Oct. 20th, Mr. S. G. SHATTOCK, the President, being in the chair.

Mr. R. LAWFORD KNAGGS and Dr. O. C. GRUNER communicated a paper on a case of Rare Disease of the Long Bones terminating in Sarcoma of the Femur. The patient was a male, aged 53 years, who was admitted into the Leeds General Infirmary on Jan. 18th, 1907. He had enjoyed good health till a fortnight before, when he began to suffer from aching pains in the legs. On the night of the 17th his right foot slipped; he heard a crack and found that his leg was broken. The fracture was treated but on April 2nd a skiagram showed displacement and erosion of the ends of the fragments as if by sarcoma and on April 10th the limb was amputated at the hip-joint. The patient made a satisfactory recovery. The femur, tibia, and fibula of the amputated limb were reserved for examination; they were sawn through longitudinally. In all three bones the cancellous structure was largely replaced by soft tissue which cut easily and was gritty. It spread through almost the whole length of the bones in an irregular manner and was in the main sharply differentiated from the cancellous bone which was not replaced by it. Lying in this soft tissue were innumerable calcareous fragments or spicules which, though not preventing portions for examination from being readily cut out with a knife, were yet sufficiently dense to require decalcification before satisfactory microscope sections could be made. In some parts the calcareous infiltration was so slight that this was not necessary. There were also larger masses of very dense bone which were situated in some instances where marrow is normally present, such as the medullary cavity of the tibia. The shell of compact bone was quite normal except where it was eroded at the seat of fracture in the femur and there was no distinct subperiosteal thickening. At the seat of fracture the ends of the two fragments were eroded for a short distance on their compact surfaces. There was no expansion of the bone but the destruction of the compact tissue was complete on the inner side. In the muscle surrounding the seat of fracture there was an infiltrating mass of growth. When admitted to the hospital the patient gave a history of privation and the histological features of the abnormal tissue in the amputated limb bore some resemblance to those of rickets, a disease generally acknowledged to be due to causes which influence nutrition. One of the most striking features in the structure of the diseased bone was the change in the marrow. There was a groundwork of connective tissue filling in the spaces between the bone trabeculæ, as met with in several abnormal conditions of bone. In a rare disease of bone named by Pitts and Shattock "non-calcifying plastic osteitis" the spaces between the trabeculæ were uniformly occupied by a cellular connective tissue in which there was an abundant vascular supply. In the case here recorded the connective tissue had taken the place of the marrow both in the central medullary canals and between the trabeculæ which were substituted for the cancellous tissue. It was markedly vascular and excepting one or two sections in which a few scattered fat cells appeared the replacement of the normal by the abnormal marrow was complete. Another very noticeable characteristic was the way in which bone formation and absorption were going on or had taken place; the total amount of bone was very much diminished and its distribution was uneven and irregular. The trabeculæ were widely separated by the connective tissue in which they seemed to be scattered without any obvious arrangement, but evidence was not wanting that as ossification progressed there was a tendency for some degree of orderliness to be assumed. They showed, however, no sign of Haversian systems and the bone cells were angular and rounded and not stellate and there were no canaliculi. In some of the trabeculæ where calcification was progressing the central portion was obviously calcareous (staining with hæmatoxylin) and the peripheral portions were devoid of lime salts. That was much the same condition as Pitts and Shattock described in their case of "non-calcifying plastic osteitis." The condition of the bone in the immediate proximity of the diseased tissue varied. In a section made to show the transition from health to disease the healthy area was occupied by atrophic laminated trabeculæ. In other parts, noticeably the great trochanter and the neck of the femur, there was marked sclerosis. The supervention of sarcoma was of much interest in view of the resemblance that the case had to osteitis deformans in histological details. It was, perhaps, one of the best-known facts about the latter disease that some cases terminated in cancer. The direct relation of the malignant tumour to the disease was not, however, always very clear. Pitts and Shattock had quoted a case which they regarded as one of osteitis deformans in which the growth of a cystic fibrifying sarcoma ensued in the upper end of the diseased tibia. Osteitis deformans was a disease of later life and its tendency was to progress and to involve bone after bone. The presence of an abnormal tissue in a state of ill-regulated activity which continued in that condition for many years and showed no tendency to cure was a very obvious favouring condition for the development of sarcoma.—The PRESIDENT said that the case seemed very like the one described by him and Mr. Pitts, and after Dr F. PARKES WEBER had spoken Mr. KNAGGS replied.

Dr. P. N. PANTON read a paper dealing with an Investigation into Some Aspects of the Action of Arsenic. He showed that the effects of giving arsenic to rabbits in considerable

daily doses were to cause a diminution in the body weight, to produce an ordinary and mild secondary anæmia, as evidenced by decrease in the number of red cells and percentage of hæmoglobin, and to bring about a condition of general vascular dilatation throughout the viscera, accompanied by other indications of cardiac failure, the vascular changes being considerably more marked in other rabbits which were given single poisonous doses. He was unable to produce in rabbits microscopical evidence of fatty degeneration in any viscus, but found an apparent diminution in the normal amount of fat in the liver even after severe and prolonged treatment; he concluded that the recognised power of arsenic to produce fatty degeneration had been exaggerated. He described changes in the thymus gland ranging from a diminution in the number of the eosinophile cells and in the number of the concentric corpuscles in those animals which had received poisonous doses to a complete atrophy of the gland after ten weeks' arsenical treatment. He gave an account of numerous experiments in which the effects on phagocytosis of adding arsenic in solutions of varying strengths to the blood *in vitro* were observed. He found that phagocytosis was greatly diminished when arsenic was added in strong solution and was considerably increased in the presence of very dilute solutions, the phagocytic activity of the leucocytes being doubled when working in a solution of 1 in 200,000; he further showed that both the depressant and the stimulating action of arsenic were upon the cells and could take place in the absence of plasma. Comparable effects of arsenic upon chemiotaxis were described as the results of experiments in which arsenic in strong and in weak solutions was injected into the peritoneal cavity of guinea-pigs.

Dr. J. P. CANDLER read a paper on a case of Malignant Jaundice associated with Graves's disease which showed the following points of interest: (1) an association with exophthalmic goitre which provided the *locus minoris resistentiæ;* (2) the presence of a septic condition of the tonsils which might have provided the necessary focus of infection; and (3) the isolation of an organism which possessed the characteristics of bacillus coli communis, which might possibly have assumed the pathogenic properties responsible for the death of the patient.

Dr. J. BURTON CLELAND communicated a preliminary note on Melanotic Deposits in Cattle and Sheep in Western Australia. During the year 1907 his attention had been drawn to the frequent occurrence in cattle and sheep in Western Australia of deposits of melanin. Occasionally the deposit was found in subcutaneous fibromata, but in many there was no tumour formation at all. He was at a loss to account for the presence of the pigment matter. A melanotic pigmentation of the livers and portal glands of sheep which was very common at times was supposed by the slaughterman to be caused by the animals eating "salt bush" (order Salsolaceæ), but he had heard that that pathological condition occurred in parts of the country where the sheep could not get that food. In two instances in bullocks there was an intense black deposit of melanin in the suprarenal glands, lying, however, not in the gland cells but in granules in the supporting connective tissue cells, being especially dense in those of the vessel walls. In these two instances also there was a marked pigmentation, though not so deep as in the suprarenal gland, in the dura mater of the spinal cord, in wedge-shaped areas in the lungs, and in the tissue round the aorta. Bearing in mind the marked pigmentation of Addison's disease it was possible that in these instances, and perhaps in all the other cases too, the cortical cells of the suprarenal glands were responsible for the elaboration of the pigment which, then in a soluble form, passed on to the blood-vessels in its course, being stopped and "precipitated" by some of the connective tissue cells and was from them taken up by cells in various other parts.

MEDICAL SOCIETY OF LONDON.

Malignant Disease of the Liver.—Sciatica.

A MEETING of this society was held on Oct. 26th, Mr. C. B. LOCKWOOD, the President, being in the chair.

Dr. H. D. ROLLESTON read a paper on Some Points in the Diagnosis of Malignant Disease of the Liver. He said that a large cirrhotic liver was extremely likely to be confused with malignant disease in a comparatively early stage but only at that period, for cirrhosis never produced the extreme enlargement seen in advanced cases of malignant disease. Extreme enlargement, extending below the iliac crest, was, provided a moveable or displaced liver or a tongue-shaped lobe was eliminated, almost certainly malignant. Although the presence of definite nodules and of umbilication—the latter being far from common and subject to some fallacies—was very strong evidence of malignant disease, the absence of those signs did not put that diagnosis out of court, for there might be a single large primary growth imbedded in the substance of the organ and expanding it or there might be a diffuse infiltration with secondary growth. Uniform enlargement was rather in favour of cirrhosis; enlargement confined to the left lobe, though not common, of new growth. The association of a palpable spleen was a valuable sign in favour of cirrhosis, and although he had seen it in cases of malignant disease it was unusual and due to some complication, such as thrombosis of the splenic vein. The combination of ascites and jaundice was seen in both cirrhosis and malignant disease of the liver but was commoner in growth. In a patient with the abdomen distended with ascites it was often impossible to express any opinion until as a result of tapping some impression could be formed as to the size of the liver. In cirrhosis jaundice was less prominent and might be transient. In malignant disease the onset of jaundice, though usually gradual, painless, and progressive, was not so in all cases. It might come on with the symptoms usually considered to be characteristic of "catarrhal jaundice," namely, vomiting and diarrhœa. With such an onset the jaundice might steadily persist and deepen, or it might lessen or even intermit in such cases. It was probable that in the first instance slight pressure on the common or other large duct so diminished the resistance of the duct that a mild grade of infective cholangitis was set up; if the pressure on the duct did not increase, the biliary obstruction diminished as the cholangitis subsided; if, on the other hand, the pressure on the duct progressed absolute obstructive jaundice might result. The history of alcoholism and the age of the patient had some bearing on the diagnosis; a considerably enlarged liver in a patient over 60 years of age, especially if not obviously alcoholic, was more likely to be malignant than cirrhotic, especially if the patient had previously been free from all minor ailments. Too much importance, however, must not be laid on the history. Variation in size was important: a malignant liver increased in size, though its rate of progress might be irregular; a cirrhotic liver might certainly show some increase in size, but on the other hand it might diminish in size. Although from increased abdominal distension a malignant liver might be less easily mapped out, no real diminution ever occurred. Hepatic syphilis, especially gummas on a lardaceous liver, might closely imitate malignant disease. In such cases the history of syphilis was not enough to guide them, as malignant disease might, of course, supervene in a syphilitic subject. The most trustworthy guide was the effect of a thorough anti-syphilitic course of treatment. Concomitant splenic enlargement, albuminuria, and diarrhœa were important as pointing to lardaceous changes in the spleen, kidneys, and intestines; these conditions were very rare in malignant disease of the liver. The nodular and deformed liver due to gummas and cicatrices might also imitate malignant disease, and in that connexion it was interesting to remember that before the true nature of the visceral lesions of syphilis was recognised gummas were regarded as cured malignant disease. The gummatous liver did not increase in size in the same manner that a malignant liver did, and though it might give rise to pain and ascites there was seldom the same degree of constitutional disturbance as was seen in malignant disease. Inherited syphilis might in certain instances imitate sarcoma of the liver. As far as the physical signs went there might be a very close resemblance between a large primary malignant growth expanding the liver and a hydatid cyst in the same position. It was then mainly by the consideration of other factors, such as the patient's condition and history, that the diagnosis was made. In hydatid the growth increased very slowly and was painless and did not affect the patient's health and strength unless it suppurated. In malignant disease the growth increased comparatively rapidly in size, there were usually pain and tenderness, and the general health was affected sometimes even before enlargement of the liver could be detected. In other

instances several distinct hydatid cysts might project from the surface of the liver and gave rise to a knobby condition of the organ. Sometimes distinct fluctuation could be made out, or a definite hydatid thrill could be obtained. Multiple hydatid disease of the abdominal cavity might also imitate a large malignant liver. The margins of adjacent cysts which were in contact with the liver might be mistaken for the lower border of that organ. In a large liver in a young person with soft projections, compatible with the view that they were cysts, and with good general health the question of hydatid arose. The presence of eosinophiles was in favour of hydatid disease, but their absence proved nothing. In the case of a large cyst an exploratory operation should be undertaken, as its presence was a distinct menace from the risk of traumatic rupture. Although no bad result invariably followed aspiration of a hydatid cyst with a trocar, it was a risky procedure and should never be undertaken. Besides hydatid disease, almost the only chronic conditions likely, from the size of the liver which they induced, to imitate advanced malignant disease were cystic disease of the organ and leukæmia. Cystic disease might give rise to great increase in the size of the liver. It was very chronic and was associated with similarly polycystic kidneys, with which, rather than with the liver, any symptoms present were correlated. Chronic myelogenous leukæmia had not to his knowledge been regarded as malignant disease. But he had seen cases of acute lymphæmia regarded as generalised sarcoma. It was important to realise that fever might occur in malignant disease of the liver. It was true that it might be absent entirely throughout the course of the disease, especially when, as sometimes occurred, the rate of growth was slow. In uncomplicated cases a certain amount of fever was not uncommon when the growth was rapidly increasing in size. In fever due to complications the range of temperature was much wider than in uncomplicated cases and resembled that of simple suppurative hepatitis. A wandering liver rarely imitated malignant disease; its mobility and absence of the hardness and prominence seen in malignant diseases of the liver were important signs. Partial hepatoptosis, the tongue-shaped or Riedel's lobe, was not very rarely diagnosed as malignant disease. Chronic venous engorgement of the liver should very rarely be taken for malignant disease of the liver. Hanot had described such cases under the name of hepatic asystole, in which from the absence of any cardiac murmur and the size of the liver attention was focussed on that organ. It appeared that influenza might give rise to hepatitis. It was rare, but occasionally after influenza the liver became enlarged and there was fever.—Dr. F. DE HAVILLAND HALL quoted cases to show that a necropsy did not always clear up the diagnosis of malignant disease of the liver until a microscopical examination was made.—Dr. SIDNEY P. PHILLIPS narrated a case of influenza with an enlarged liver and Dr. F. J. POYNTON pointed out that occasionally pedunculated growths of the liver occurred which simulated gall-bladder cases.—Dr. L. G. GUTHRIE spoke of pyrexia in cancer of the liver and Dr. ROLLESTON, in replying, mentioned that the condition called primary carcinoma of the liver with cirrhosis was interesting as an example of malignant disease arising on a chronically inflamed organ, a sequence comparable to carcinoma supervening on chronic superficial glossitis.

Dr. WILFRED HARRIS read a paper on the Diagnosis and Treatment of Sciatica. He said that sciatic neuritis or sciatica might be produced by a variety of causes which, for the purposes of classification, might be described as: (1) primary, and (2) secondary. The latter group would include cases in which the nerve or the nerve sheath had become involved by pressure or by an inflammatory process in the pelvis or buttock, such as a pelvic tumour, lumbo-sacral osteo-arthritis, tuberculous caries of the sacrum or lower lumbar vertebræ, caries of the ileum, or chronic osteo-arthritis of the hip-joint. In chronic osteo-arthritis of the lumbar spine, sacrum, or hip-joint a good x ray photograph would very probably be able to confirm the diagnosis. In all of the above conditions the signs and symptoms of a definite sciatic neuritis might be present and it would therefore be necessary to exclude them by a systematic examination of the pelvis, spine, and hip-joint before making the diagnosis of a primary sciatica. Further, in tabes dorsalis, chronic Bright's disease, and peripheral neuritis due to diabetes or to chronic alcoholism, bilateral pains, more or less along the course of the sciatic nerve, might be mistaken for a genuine primary sciatica. That bilateral feature of the pains was, indeed, the most suggestive indication that some other cause than a primary sciatica was to be looked for, such as tabes, peripheral neuritis, chronic osteo-arthritis, or tuberculous caries of the lower lumbar vertebræ or sacrum, or possibly a spinal tumour or pachymeningitis. Syphilis was a not very uncommon cause of severe pains around the lower back, hip, and front of the thigh, due to a gummatous neuritis affecting the lumbar roots, and causing wasting and fibrillary tremors in the muscles on the front of the thigh, with some diminution of sensation on the front of the thigh and leg. That disease appeared to have a special predilection for the upper roots, distinguishing it from sciatica. There should be no difficulty at all in differentiating between these two diseases, inasmuch as the course of the pains differs from that of sciatica in invading the front of the thigh, and also in the rapid course of the disease, leading to noticeable wasting of the thigh within a few weeks. Gouty neuritis might cause more or less symmetrical pains around the hips and thighs, both front and back. That was often spoken of by the patient, and sometimes by his medical attendant, as sciatica, though it ran a somewhat different course. Primary sciatica might be (*a*) acute or (*b*) chronic. Acute sciatica might be defined as a rheumatic, or in some cases a gouty, perineuritis of the sheath of the sciatic nerve, either at its exit from the pelvis at the sciatic notch or starting a little farther down and affecting the nerve perhaps for several inches down as far as the middle of the thigh. Two modes of onset were especially definite and common: (1) in which the sciatica was preceded by a lumbago, or lumbo-sacral fibrositis; and (2) in which the attack was closely preceded by exposure of the back and thigh to cold and wet, as by sitting in wet clothes, tobogganning, &c. The nerve sheath was stated to be swollen, thickened, and reddened at that stage, with perhaps an inflammatory exudate, and the symptoms of severe lancinating pains, worse on every movement, and especially of flexion of the hip, with tenderness on pressure over the course of the nerve, could easily be understood by the involvement of the nerve filaments supplying the sheath in the inflammatory tissue. The tenderness was usually most marked at the fold of the buttock or three or four inches farther down the thigh. Irritation of the nerve bundles passing upwards from the leg through that inflamed area caused referred pains along the course of the nerve down to the ankle, with perhaps the appearance of tender spots at the ankle or knee. At that stage there was no muscular weakness or wasting, no anæsthesia, and the only alteration of the reflexes was an occasional increased excitability of the Achilles jerk on the side of the affected leg. Extension of the nerve by flexing the hip with the knee kept straight caused severe pain and the gait was apt to be characteristically altered. The patient walked with the body slightly bent forwards and towards the affected side; the knee was kept slightly flexed and the pelvis was swung forward with the affected lower limb in order to minimise the amount of movement of the hip, the foot being turned inwards. In the worst cases there was pain in any and every position, though it was worse on movement. Pain was present even on lying flat in bed, and the patient could not lie on the affected side but usually preferred to lie slightly turned over towards the other side, the bad leg being supported by the other or on a cushion placed between them. Sleep was difficult and broken and might often best be relieved by suppositories of half a grain of morphine at 9 P.M. There were two points in the treatment which he considered especially useful in the acute stage: the patient should be kept entirely in bed upon a full-sized water- or air-mattress, taking care to place a double layer of blanket between the rubber mattress and the under sheet for the patient to lie on. That alone gave considerable relief and might allow a patient to lie on his back who could previously lie only turned over on the sound side. It was often taught that galvanism should not be used until the acute stage had passed, but in his opinion a most valuable remedy was then withheld. A strong current should be used, but it must be given with great care and the effects were much better if cataphoresis with salicylate of sodium was employed. His practice was to use a flat padded leaden electrode, seven inches by four, placed longitudinally across the fold of the buttock, the face of the electrode being covered with a layer

of wet cotton-wool over which was poured a couple of drachms of saturated solution of salicylate of sodium. The electrode was attached by a length of electric-bell wire to the negative binding screw of a galvanic battery of 24 or more cells. The positive binding screw was similarly attached to a larger electrode, which was placed either at the back of the lower part of the thigh or was moulded around the lower part of the leg and ankle, according as to which was the more painful spot. That lower electrode was similarly padded with wet cotton-wool, on which was placed some bicarbonate of sodium to make a thin paste. Owing to the projection of the bones at the ankle-joint it was almost impossible to mould a leaden electrode so as to press evenly on the skin, and there was consequent considerable danger of electrolysis of the skin in that region, hence a more flexible electrode made of copper ring-mail thickly padded he found more satisfactory to use for the ankle. With the electrodes placed in position, the leg resting on a thick towel placed over a mackintosh and warmly covered up, the current was turned on slowly until from 20 to 25, or even 30, milliampères were registered on the galvanometer. With a newly charged battery, the electrodes being applied in that manner, that strength of current might be obtained with from 13 to 20 cells. The current should be allowed to run for about 20 minutes and the process should be repeated twice a day, morning and evening. The effect of using salicylate of sodium upon the negative electrode was to force the electro-negative salicyl ions through the skin into the tissues on their way to the positive electrode; in that way a drug, if of the nature of an acid or base, might be made to enter the tissues from the appropriate electrode, negative or positive as the case might be, and exert a local and a general action upon the tissues. Aspirin might also be given with advantage by the mouth in 15-grain doses three times a day, and relief from the severity of the pain was to be looked for from the first day, improvement in ease in lying, and in length of sleep at night being the first signs of improvement. That treatment should be continued uninterruptedly for a fortnight, with the exception of the morphine suppositories, which might usually be discarded after the first four or five days. The object of the treatment was to cause the arrest of the perineuritis, the absorption of any inflammatory exudate, and lastly, but by no means least, to prevent the formation of adhesions between the sheath of the nerve and surrounding structures. The first two of these points would be best gained, in his opinion, by the treatment which he had described above, but in order to prevent the formation of adhesions it was necessary to use massage and passive movements of the hip at the right time. If massage was used too early during the acute inflammatory stage of the sheath, it was obvious that harm and not good would be done, whereas if it were omitted altogether or postponed for several weeks there was a danger that adhesions might form too tough to be broken down except by a surgical operation. It was, therefore, a somewhat nice point to decide precisely when to commence the massage and movements. He usually did so at the end of the fortnight's treatment, when the water mattress might be removed and the galvanism given only once daily. The indications for the commencement of the massage were the disappearance of all pain while lying quiet and the recovery of ability to lie on the affected side, together with the marked diminution or disappearance of tenderness of the nerve on pressure, with an increased range of flexion of the hip, keeping the knee straight, without causing pain at the back of the buttock. By attention to the details of treatment described above very few cases of acute sciatica would drag on into chronic cases with constant pain and wasting of the muscles, which denoted that the original perineuritis had invaded the nerve bundles, setting up an interstitial neuritis and damaging the actual nerve fibres by pressure, as the inflammatory tissue hardens down into fibrous tissue. There were two conditions of the nerve which might be relieved surgically: (1) external adhesions between the sheath and surrounding structures, from the sciatic notch down to the middle of the thigh; and (2) the toughened and contracted condition of the nerve itself which resulted from those severe cases of perineuritis which had gone on to chronic interstitial neuritis. Treatment by nerve-stretching, acupuncture, and injections of all kinds were, he believed, valueless, as they were unscientific for the treatment of a mixed motor and sensory nerve such as the sciatic. Blisters down the back of the thigh had certainly more to be said for them, though personally he preferred to do without them.—Dr. C. W. CHAPMAN, Sir JOHN BROADBENT, and the PRESIDENT joined in the discussion that followed and Dr. HARRIS replied.

LIVERPOOL MEDICAL INSTITUTION.

A Serum Treatment for Carcinoma in Mice.

A MEETING of this society was held on Oct. 22nd, Mr. T. H. BICKERTON, the President, being in the chair.

Dr. J. R. LOGAN proposed and Dr. W. B. WARRINGTON seconded the following motion: "That the thanks of the members of the Medical Institution be most heartily tendered to the President, Mr. T. H. Bickerton, for his most handsome gift consisting of book-cases and furniture for the upper library, rendering it ornate, comfortable, and convenient as a place for private study." The motion was carried unanimously. The milk-supply sub-committee read its report to the institution.

Mr. C. E. WALKER, assistant director of Cancer Research, University of Liverpool, read a paper on a Serum Treatment for Carcinoma in Mice. Having referred briefly to the similarity between certain phenomena occurring among the reproductive cells and among the cells of malignant growth, he pointed out that in the development of the series of experiments he was about to describe he had regarded this similarity in phenomena as being secondary to the fact that both groups of cells had passed out of coördination with the body or soma of the organism in which they occurred. Any group of cells living on the organism, but out of somatic coördination with it, were living practically as parasites. He then gave a brief explanation of the exact sense in which he used the term "somatic coördination," which is not quite the same thing as is understood by coördination used in a physiological sense. The first step in the series of experiments was to discover whether the presence of the reproductive cells in large numbers produced any effect upon the organism as a whole. In order to decide this several hens were injected hypodermically with a fresh emulsion of cock's testis every day for several months. Their combs and wattles grew enormously and certain other changes seemed to indicate that the continued introduction of the cells of the testis produced definite effects upon the whole organism. On the supposition that the continued introduction of the reproductive cells of one species of animal into another species might produce in the blood of the latter a substance that was destructive to the reproductive cells of the former, a number of rats were injected with a fresh emulsion of the testes of mice. At the same time other rats were injected hypodermically with a similar preparation of a spheroidal-celled carcinoma from mice. The idea of the testes injection was, that any substance which possessed a destructive action upon the reproductive cells might have a similar effect upon other cells out of coördination with the soma. In the first instance, mice with well-developed tumours were injected with the serum of the rats. Eight days were allowed to elapse between the last injection of testes or carcinoma into the rats and the taking of the serum from them. Ten mice were injected with the testis serum, ten with the carcinoma serum, and ten controls were injected with the serum of a normal rat. In the case of the mice injected with the testis serum and those injected with the carcinoma serum the tumours became markedly hyperæmic within 48 hours. The tumours in these mice also grew much more rapidly than in those injected with normal serum. In the mice injected with normal serum the tumours did not become hyperæmic. Another three batches of mice were subsequently treated with serum from rats, in which 14 days had been allowed to elapse between the last injection and the preparation of the serum. The average size of the tumours, measured by taking the two longest diameters at right angles, in the mice injected with testis serum was 1·619 centimetres square on the day that the injection of serum was commenced. The average size of the tumours in the mice treated with carcinoma serum was 0·674 centimetre square; in the control mice which were injected with normal rat serum the size of the tumours was 1·484 centimetres square. The experiment commenced on August 6th. On August 26th the average size of the

tumours in the surviving mice injected with testis serum was 2·8 centimetres square, giving an average growth of 1·181. In the mice injected with carcinoma serum the average size on August 26th of the tumours in the surviving mice was 0·67, showing a decrease of 0·004. In the control mice the average size on August 26th was 4·54, showing an increase of 3·056. Among the mice treated with testis serum, the tumour in one which was then 1·5 by 1·2 centimetres became suddenly gangrenous. Within a few hours the mouse died from septic absorption. There were no signs of gangrene in any other part of the mouse. The same thing happened in six other mice later. In the mice treated with carcinoma serum the tumours in seven dried up and came away as small scabs. The fact that this happened in five mice before August 26th accounts for the fact of the apparent decrease in the size of the remaining tumours on that day. The growth of the tumours that had not disappeared was, however, much less than the growth of the tumours in the control mice. With regard to the tumours that suddenly became gangrenous, it might be pointed out that in 743 mice with well-developed tumours, which were not subjected to any treatment at all, the tumours dried up and dropped off spontaneously in two cases, but in no case did the tumour become suddenly gangrenous without any change in the rest of the mouse. Mr. Walker regarded the results obtained with the testis serum as being more suggestive of a profitable line of research than the results obtained with the carcinoma serum. He came to this conclusion because it seemed possible that the testis serum might possess a destructive action on all cells out of coördination with the soma, particularly as in the case of the buck mice treated with it, the testes seemed to atrophy, as well as the growth of the tumour being inhibited, or the whole tumour becoming gangrenous. On the other hand, with the carcinoma serum it was obviously improbable that this substance would act on anything but the particular tumour with which the rats had been injected. Mr. Walker then described a series of experiments and observations undertaken with a view to arriving at some explanation as to the rarity of metastases in these tumours produced in mice by grafts. He believed that his results gave an adequate explanation and that there were no reasons for regarding this tumour in mice as being essentially different from tumours with a similar microscopical structure occurring in man. Mr. Walker, while suggesting the possibility of his results being due to remarkable series of coincidences, said that he could hardly believe that this was a probable explanation of his results. He thanked Mr. George Arnold, Dr. E. E. Glynn, Mr. Keith W. Monsarrat, Dr. R. Stenhouse Williams, and Dr. Debaisieux for the help which they had given him in the carrying out of his experiments.

Mr. RUSHTON PARKER remarked that such researches might well be envied by those engaged in purely clinical work as a help more fully to grasp the problems which all members of the profession have to deal with and should encourage to the best of their power. It was fortunate that a charitable trust provided the means for carrying them out.

Dr. W. BLAIR BELL said that he did not think the work of Mr. Walker could be regarded as original or new. Work on immunisation with mouse-tumour cells was published as long ago as 1901 by Jensen, and since then the work had been repeatedly confirmed and extended by many observers: by Borrel, by Clowes, by those working under the Imperial Cancer Research Fund in London, and many others. Work on immunisation with "testis serum" had been done by Borrel and Bridré and undoubtedly by others; in fact, most of the cells in the body had been employed and also fœtal mouse cells in producing immunisation, and hand in hand of course with this in producing curative effects on these animal growths. All the work done tended to show that it was comparatively easy to produce immunisation against mouse tumour in a certain percentage of cases by a variety of means, and almost as easy to produce curative effects. The large amount of work which had been carried out on cytolysins made it quite clear how these results were obtained. Unfortunately, in regard to human malignant growths results on these lines had never yet been within sight. He was extremely surprised to hear "testis serum" advocated in view of the fact that seven out of eight mice, said to be "cured" by this serum, had almost at once succumbed to septicæmia following moist gangrene of the growth. He (Dr. Blair Bell) could not see much choice between an inoperable carcinoma of the uterus and a gangrenous condition of that organ, and he utterly failed to appreciate how such a process could be called a cure. Further, it was not a cytolytic process in the ordinary sense of the word, since the whole process was said to occur in a few hours, and was probably due to venous thrombosis. As the result of many necropsies which he had performed he did not consider that the particular strain of mouse tumour used in Liverpool (Ehrlich's of the Nth generation) fulfilled the criteria necessary in the case of human cancer. It was extremely rare in this particular growth to see infiltrations or metastases, as Mr. Walker had himself admitted. Dr. Blair Bell concluded by saying that it seemed most probable that the cure of malignant disease generally would follow the discovery of some method of producing specific cytolysins for human malignant growths, and towards this he thought attention should be directed—but in fresh channels.

Dr. GLYNN commented on the fact that the tumours treated with cancer serum dried up while the majority treated with testis serum became gangrenous. Was the gangrene the direct result of a specific action on the tumour cells or indirectly due to thrombosis or possibly bacterial infection? Did the spontaneous cure of the tumours ever occur by gangrene?

Dr. R. J. M. BUCHANAN, Dr. WARRINGTON, Dr. A. STOOKES, Mr. MONSARRAT, and Mr. R. E. KELLY also discussed the paper and Mr. WALKER replied.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—The first meeting of the session of this society was held on Oct. 23rd. Dr. W. H. Cheetham, the President, who was in the chair, read an address on Conditions and Changes in General Practice during the Last 30 Years. Dealing first with public appointments he referred to the fact in the case of Poor-law medical officers first appointed in 1834 that, in spite of the increase of the cost of living and drugs, an officer's salary was rarely increased, but that a favourable feature was the introduction of the superannuation fund. He also noted that probably in the near future boards of guardians would be abolished and the work administered through district and parish councils, and that vaccination would be no longer compulsory. Regarding the post of certifying factory surgeon to the Home Office, he pointed out that at present there was a movement for its abolition on the grounds that under the Education (Administrative Provisions) Act, 1907, the final examination of the school medical officer would suffice for the certificates of fitness for employment. In insurance work he noted the tendency of companies to issue policies without medical examination. In public health appointments reference was made to the increased work of county and county borough medical officers of health through the inspection of midwives and the supervision of the inspection of children in elementary schools, and the increased work of the local medical officers of health through the Notification Act, the Dairies and Cowsheds Act, the inspection of school children, and the formidable list of forms to be completed. He also alluded to the increased number of men taking a Diploma in Public Health, in view of the inspection of school children and the fact that in all probability each county and county borough in the near future would be obliged to appoint a full-time medical officer of health, whilst there was also a tendency for local authorities to combine and appoint full-time men. Dealing with family practice, he pointed out that the factors in favour of the general practitioner were: more medical attendance per head, better pay, less resort to quacks and bonesetters, and more comfort in doing one's work. Adverse factors were the encroachments on medical work by outsiders, the prescribing chemist, the use of tabloids, the district nurse, the certified midwife, isolation hospitals, and the transference of patients to nursing homes for operations. Finally he said: "What, however, looms biggest in the future is the legislation for the children attending elementary schools under the Education (Administrative Provisions) Act, 1907, the possibilities of which are boundless. Commencing first with the medical examination of school children it threatens to end with the treatment of the same, either at hospital, where the staff may be remunerated for their services, or, in towns at least, by the provision of clinics."—Dr. J. B. Hellier described the case of a woman, aged 31 years,

who was admitted into the Leeds Infirmary in labour, whose pelvis was occupied by an ovarian cyst as large as a melon which prevented the head from entering the pelvis. She had had three previous normal labours. He performed ovariotomy, removing the cyst but leaving the uterus untouched. The wound was carefully and firmly sutured in three layers. The patient was then left for delivery by natural process and a living child was born two and a half hours later with a little help from forceps to save straining. The wound was not injured by labour and healed without suppuration. The mother suckled her child and made a quick recovery. The operation was performed on June 20th last and the patient and child were shown at the meeting. Dr. Hellier advocated this method of dealing with labour complicated by ovarian cyst when the cyst could not be pushed up out of the way and facilities for the major operation were at hand. Only when the case was urgent and the patient was remote from skilled assistance would he advise tapping per vaginam.—Cases were shown by Professor T. Wardrop Griffith, Professor H. Littlewood, Dr. R. A. Veale, Dr. E. F. Trevelyan, Mr. A. L. Whitehead, Dr. T. Churton, Mr. B. G. A. Moynihan, and Dr. W. H. Maxwell Telling.

MANCHESTER CLINICAL SOCIETY.—A meeting of this society was held on Oct. 20th, Dr. J. J. Cox, the President, being in the chair.—"The Value of the Routine Estimation of Urea as a Guide to Treatment" was the title of a paper read by Professor Arthur Foxwell of Birmingham. He referred to the fallacy of regarding the presence of albumin in the urine of a patient as necessarily indicative of serious renal disease, and pointed out of how much more importance was the estimation of the urea excreted by the kidneys, and showed how necessary was the maintenance of the normal relation between the intake and the output. The question of the effect on the kidneys of surgical operation was one to which he had given considerable thought, and he was convinced that apart from those cases where immediate operation was indicated every patient should go through at least two weeks of medical supervision before indulging in operative interference. During this period the urine was to be examined daily and the percentage of urea estimated. Only in this way could they be sure of the patient being fit to undergo an operation without running the risk of disappointing the hopes of the surgeon by dying from post-operative renal trouble. He regarded the pathological reports of the condition of the organ as likely to be misleading, for the reason that the pathologist made his sections usually from parts which appeared to be diseased portions and in making his reports was likely to disregard the fact that, apart from the small portion examined, the whole of the rest of the organ might be quite healthy.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held at Liverpool on Oct. 16th, Dr. A. J. Wallace (Liverpool), the President, being in the chair.—Dr. H. Briggs (Liverpool) exhibited the following specimens: (1) Cervical Fibroid undergoing Spontaneous Enucleation; (2) Follicular Cyst of the Ovary and Small Tubal Mole; (3) Œdematous Fibroma of the Ovary; (4) the Uterus and Appendages from a case of Tuberculous Metro-salpingo-oöphoritis; and (5) Calcified Fibroma of the size of a Billiard Ball, removed from the pouch of Douglas in a woman aged 60 years.—Dr. D. Lloyd Roberts (Manchester) showed a Cyst of the Right Labium Majus of the size of a large orange, removed from a patient, aged 34 years, IV.-para, attributable to an injury of the vulva about three years ago. Considerable pain of a neuralgic nature was present in the right groin. Coincidently there was an intra-uterine fibroid polyp causing menorrhagia.—Dr. A. Donald (Manchester) narrated the case of a patient, aged 22 years, three years married, with one child two years old, in whom there was a history of regular menstruation until February last, when the period was ten days late and lasted about ten days. On the tenth day there was sudden colicky pain in the abdomen, followed four days later by a severe peritoneal crisis. Per vaginam, a small swelling could be made out near the left cornu of the uterus. Abdominal section revealed diffuse intra-peritoneal hæmorrhage due to the rupture of an early isthmic tubal gestation. Convalescence was normal.—Dr. Donald also communicated three cases of Red Degeneration of Uterine Fibroids associated with symptoms of Toxæmia and exhibited the specimens.—Dr. W. Blair Bell (Liverpool) related a case of Uterine Fibroids complicating a four months' pregnancy in a nulliparous woman, aged 35 years. Supravaginal hysterectomy was performed on account of a cervical growth filling the pelvic cavity.—Dr. J. E. Gemmell (Liverpool) briefly recited the after histories of two cases of Multiple Fibroma Uteri. In the first, treated by myomectomy with removal of two growths, one of which weighed 2½ pounds, the patient returned four years later much debilitated by menorrhagia and metrorrhagia, with a submucous and two interstitial growths, the largest of which was of the size of a hen's egg, necessitating subtotal hysterectomy. The second case returned two years after subtotal hysterectomy; the growth was undergoing necrobiosis. The patient was a virgin, aged 30 years. The uterine appendages were normal and were not removed. Eight months before her return bloodstained offensive yellow vaginal discharge became a constant source of complaint and during the last five months almost constant bleeding, so that she was incapacitated from work. The pelvis was occupied by a swelling, felt on the top of the cervical stump, which in shape and size resembled a uterus pregnant two months and was very tender. The abdomen was opened and the right ovary was seen to have formed an abscess. Both appendages were removed. These cases illustrated that in the presence of fibroid growths in young women there may be "seedlings" present which escape the senses of touch or sight and raise the question, Should hysterectomy be done in all such cases? and that where the ovaries are not removed infective changes may take place leading to their disintegration and possibly the probable source of infection by the bacillus coli.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Oct. 16th, Dr. J. Walker Downie, the President, being in the chair.—Dr. G. H. Edington showed a boy, aged 12 years, operated on for Traumatic Rupture of the Small Intestine. The boy, going down hill with a heavy barrow, started to run and lost control. He was driven against a lamp-post obliquely and was bruised about the region of the left iliac region. He had had no food for five hours. He complained of diffuse abdominal pain, vomited at intervals, and showed signs of shock. The abdominal wall became hard and he became very restless. Laparotomy was performed 10½ hours after the accident and a transverse rupture of the small bowel was found 80 inches above the ileo-cæcal junction. The ends of the bowel were turned in by a purse-string suture and a lateral anastomosis was made. The abdomen was washed out with sterile saline solution and the wound closed, a tube being passed down to the recto-vesical pouch. Rectal saline injections were given for the first three days, after which food was given by the mouth. Recovery was uninterrupted.—Dr. Leonard Findlay read a paper on the Etiology of Rickets, based on his results of a clinical and experimental research. These results showed that there was much evidence in favour of lack of exercise being the cause of rickets. This disease occurred among the children of the poor resident in cities. It occurred at two periods of the child's life, before and after learning to walk, and in both types of cases there was almost invariably found a history of confinement and want of exercise. In the later type the inception of the disease was frequently subsequent to some illness, such as bronchitis or measles, or to some illness of the mother, both of which factors would necessitate confinement and lack of exercise. The diet in these cases might have been the same for several months, but the disease only manifested itself after confinement.—An interesting discussion followed this paper. A majority of the speakers thought Dr. Findlay hardly warranted in his conclusions.—Dr. J. Lindsay Steven said he considered that exercise would increase the bony deformities of the disease.—Dr. J. Brownlee gave a short account of certain aspects of Epidemics in Relation to their General Biology. He showed by means of lantern slides the regular course of many epidemics and pointed out how the form of these epidemic curves necessitated in general a loss of infectivity on the part of the organism approximating per unit of time to a geometrical progression. Thus an epidemic in general died out much more commonly from loss of infecting power on the part of the organism than from any other cause. The main agent in an epidemic was the infectivity of the organism and not the susceptibility of persons affected. Thus, for instance, an epidemic of influenza ran a practically identical course

whether occurring in summer or winter—a fact difficult to explain on the ground of temporary susceptibility on the part of the population.

MEDICO-LEGAL SOCIETY OF LONDON.—A meeting of this society was held on Oct. 20th, Mr. Justice Walton, the President, being in the chair.—An address entitled a Plea for Correct Thinking was delivered by the President to a fair number of members and visitors. This was followed by the exhibition of specimens.—Dr. Spillsbury showed a Heart and Thymus of a Child and the Spleen of a young Man both displaying the Status Lymphaticus; Dr. W. H. Willcox showed the Organs of a woman who had died from Carbolic Acid Poisoning; and Dr. W. A. Brand handed round a copy (1720) of Hugh Chamberlain's Diseases of Women in Childbed containing reference to the secret of the forceps. —Dr. S. B. Atkinson read a paper entitled Heredity and Affiliation.—A discussion followed in which Earl Russell, Dr. W. Wynn Westcott, Dr. J. Scott, and the President took part.

Reviews and Notices of Books.

The Prevention of Tuberculosis. By ARTHUR NEWSHOLME, M.D. Lond., F.R.C.P. Lond., Medical Officer of the Local Government Board, late Medical Officer of Health of Brighton. With 39 diagrams. London: Methuen & Co. Pp. 429. Price 10*s.* 6*d.* net.

ALTHOUGH this volume is written almost entirely from the standpoint of the public health administrator, and is intended primarily for medical officers of health, nevertheless it contains information and conclusions which will prove interesting to all medical practitioners. The book is divided into three parts. Part I. deals with the causation of tuberculosis. Part II. is headed: "The means by which the reduction of mortality from tuberculosis already obtained has been secured." This portion of the work is a restatement of an investigation of which the results were last set forth in the *Journal of Hygiene* for July, 1906. In Part III. the measures for the reduction and annihilation of tuberculosis are considered.

Dr. Newsholme's remarks on the subject of bovine and human tuberculosis are well worthy of careful study. After an exhaustive survey of the investigations which have been made and the evidence which has been advanced from various sources, he comes to the conclusion that the conversion of *typus bovinus* into *typus humanus* during the lifetime of a single person and in his tissues is unproved. He considers, however, that both these types are competent to produce tuberculosis in the human being and that both forms of the disease have been identified in man. He further contends that the bovine type is more common in children than in adults, that this type retains its special characters even in the human subject, and that tuberculosis of bovine origin is much less frequent in the human subject than tuberculosis of human origin.

The influence of climate and soil in the causation of tuberculosis is carefully discussed. With regard to climate but little evidence seems to be forthcoming. Dr. Newsholme is of opinion that there is scarcely a climate which has not been looked upon at one time as predisposing to this disease and at another as curing it. He adds that there is no certain proof that tuberculosis is less prevalent at high than at low altitudes, except in so far as the former are usually more isolated and less densely populated than the latter. In support of these contentions he quotes Hirsch as saying that the disease occurs *ceteris paribus* in all geographical zones with uniform frequency and that equatorial and sub-tropical regions are visited with consumption not less than countries with a temperate or an arctic climate. Dr. Newsholme therefore asserts that the only statements which can be made in this connexion with absolute certainty are that (1) anything favouring an open-air life diminishes tuberculosis; and (2) tuberculosis is less prevalent in the less densely populated and more isolated communities.

In reference to soil, however, more is to be said. Dr. G. S. Buchanan's investigations are reviewed at some length. This observer affirmed that "wetness of soil is a cause of phthisis to the population living upon it." Dr. Newsholme doubts whether this statement can be accepted as correct and suggests that the commonly experienced excess of pulmonary tuberculosis on wet soils is due rather to the fact that those who are found dwelling on a wet soil are likely to be of a lower class of the community, worse housed, and more exposed to infection. Dr. Buchanan himself agreed that there were exceptions to the above law and suggested that "they indicate the presence of other influenees in the subsoil, which have hitherto escaped detection." Hirsch suggested that other etiological factors besides the influence of soil come into force in the given circumstances and serve to neutralise the benefits even of the most favourable conditions of soil. Finally, Dr. Newsholme arrives at the conclusion that the wet soil must be placed, like overcrowding and insufficient nutrition, among predisposing causes, infection being the chief and essential cause. Furthermore, he says, the damp soil must be placed in a lower place than either overcrowding or underfeeding. Pulmonary tuberculosis is essentially a disease of crowded populations and of indoor occupations, being transmitted by infection and favoured by the rebreathing of respired air and by organic filth of all kinds. If these factors are remedied or removed the incidence of tuberculosis declines.

In discussing the measures for the control of tuberculosis Dr. Newsholme lays great stress on the influence of institutional segregation. He gives statistics to show that with no more precautions than are taken in well conducted general infirmaries the increase of institutional segregation has been associated with reduction of tuberculosis in the communities affected by it; and that the segregation of a decreased proportion of the total bulk of tuberculosis has been associated with an increase of the disease. He claims that the scale of the observations and the number of communities examined are so large as to eliminate the chance that this correspondence has been due to mere coincidence. He further expresses the opinion that no influence except that of institutional segregation has appeared in actual experience in a constant relation to the amount of tuberculosis and he maintains that it must therefore be accepted as having been the predominant influence. This important pronouncement, so strongly expressed, merits careful thought and attention.

Dr. Newsholme describes some of the efforts which have been made in Brighton to combat the spread of tuberculosis. Amongst other matters he refers to the plan adopted in a sanatorium outside that town of admitting patients only for a month. He maintains that it is much more to the public interest to pass a large number of patients through the sanatorium and to train them thoroughly in the hygienic requirements of their disease than to treat a smaller number for a protracted period. We doubt whether this principle should be generally applied. For patients with advanced disease a short stay may be recommended but the view that it is better to treat patients with early disease over several months so as to enable them to return home with full working capacity rather than to "patch up" a larger number for a short time has much to recommend it. There are many authorities who consider that a greater economic advantage is obtained by treating the early cases thoroughly than by dealing with a large number of patients who after a time

(generally short) will probably once more break down and again apply for treatment.

On the subject of notification of pulmonary tuberculosis Dr. Newsholme speaks with no uncertain voice. He approves of voluntary notification but considers that at present it would be inexpedient, unwise, and of relatively little use to advise the general adoption of compulsory notification of pulmonary tuberculosis. We have frequently expressed our views on this matter and they practically coincide with those of Dr. Newsholme. We prefer that an extended trial should be given to the voluntary notification of the disease which has been adopted in several districts in London and elsewhere before such a drastic measure as compulsory notification should be enforced.

The whole of the volume now before us is full of interest. Careful attention is required in studying it, for it is written in a style that is difficult to follow. Many of the passages seem rather involved and require reading more than once in order to ascertain their meaning, but the mass of statistics and amount of material which have been investigated and summarised combine to make the work one of unusual value. Dr. Newsholme may be congratulated on the success of his labours which must have been very arduous, for he has brought before the medical profession information which will be of great worth in framing future measures for the control and the prevention of tuberculous disease.

A Manual of Ophthalmic Surgery and Medicine. By WALTER H. H. JESSOP, M.A., M.B. Cantab., F.R.C.S. Eng., Senior Ophthalmic Surgeon to St. Bartholomew's Hospital, &c. With 155 illustrations, nine coloured plates, and 12 photographs. Second edition. London: J. and A. Churchill. 1908. Pp. 531. Price 9*s.* 6*d.* net.

TEN years have elapsed since the first edition of Mr. Jessop's manual was published and the advance in the science of ophthalmology during that period has been great. There was, therefore, need for much revision and we find that this has been efficiently carried out. There are now many students' manuals of ophthalmic surgery and it is only by bearing in mind the excellencies and shortcomings of its competitors that we can arrive at a just value of the present work to the student of to-day. We may say at once that the book contains all that such a work should do and that the information is generally accurate. We are not, however, altogether pleased with the presentation of the subject which often lacks that definiteness which is so essential in teaching. For example, in treating of chronic catarrhal conjunctivitis we read that in the great majority of cases the Morax-Axenfeld bacillus is found. This may be true enough, but it is also true that the diplo-bacillary cases show a very characteristic picture and respond in a remarkable manner to treatment with zinc salts. Neither of these points is emphasised with sufficient clearness. Again, in dealing with the treatment of iritis we read that "in cases where high tension is present leeches should be first tried and failing this treatment eserine may be used." Such a remark states too much or too little and is quite unsuitable as it stands in a book primarily intended for students. Other examples of a similar nature could be quoted.

The illustrations are good for the most part. Fig. 41 is not a typical delineation of the lines left by deep vessels in interstitial keratitis. The archaic strabismometer, so often depicted in text-books, might surely now be relegated to works dealing with the history of ophthalmology. Mr. Jessop makes a special point of the reproductions of Professor Dimmer's photographs of the fundus. These are extremely interesting to the ophthalmologist but in our opinion of little use to the student. Those who appreciate the dangers of exposure of the eye to intense light might well have some diffidence in using the method, especially for diseased conditions of the fundus, but in this case the onus of responsibility rests with Professor Dimmer.

Das enge Becken: Eine Studie über den Geburtsverlauf und die Indikationen zu operativen Eingriffen. (*The Contracted Pelvis: A Study of the Course of Labour and the Indications for Operation.*) By Dr. H. PEHAM, Privat-dozent in Vienna. With a Preface by Professor R. CHROBAK. Vienna: Alfred Hölder. 1908. Pp. 209. Price M. 5.40.

METHODS of treatment which are very successful in well-appointed lying-in hospitals when carried out by skilled and experienced operators are not always those which are best suited for adoption by the great bulk of general practitioners, and as Professor R. Chrobak points out in his preface to Dr. Peham's book this important fact is often overlooked by teachers and by the writers of text-books. No doubt in a lying-in hospital perforation of the living child is an operation which should never be practised, but in general practices unless the life of the mother is to be jeopardised unduly, this operation, on the other hand, not infrequently must be done. The absence of the proper appliances, the impossibility of obtaining complete asepsis, and the want of skilled assistant, will negative the possibility of performing many operations in private practice which would be the best and most correct treatment for certain conditions in a lying-in hospital. In considering the treatment of contracted pelvis, for example, in cases where it is desired to induce labour three factors have to be taken into account, not one of which can be determined with any degree of accuracy—namely, the size of the head of the child, the size of the pelvis, and the duration of the pregnancy. As Professor Chrobak points out, the absurdity of measuring the pelvis in millimetres is manifest when we consider how very rough and ready our methods of determining the exact shape and size of the child's head are, and how often no account is taken of that most important factor of all—namely, its plasticity. One of the most striking features in the course of labour in many cases of contracted pelves is the manner in which different labours in the same patient will progress and how differently the same uterus will behave in successive labours, and here again we have yet another factor of great uncertainty, the character of the uterine pains.

Possibly at the present time some obstetricians are inclined to pay too little attention to the life of the mother in their anxiety to preserve that of the child, but we do not imagine that this danger will ever be present to any extent in private practice; here at any rate the life of the mother will always be held of paramount importance. It is not, however, only the life of the mother which must be considered but also the chances of her recovery with complete restoration to health. It is by the study of large numbers of cases treated under similar conditions and by the same medical attendants that our knowledge of the many interesting problems connected with contracted pelves can be increased, and Dr. Peham has done good work in publishing this careful report of a large number of cases of labour in patients with contracted pelves observed by him.

In his review of the results obtained he arrives at the conclusions that for private practitioners the induction of premature labour is likely to give the best results in suitable cases, that version is to be preferred to high forceps during labour, and further that perforation even of the living child when absolutely necessary must be carried out. The fœtal mortality in the cases treated by version is high, as it usually is—namely, 40 per cent.—but there were no maternal deaths; in the cases where labour was terminated by high forceps

the fœtal mortality was 19 per cent. and two of the mothers died. In one of these cases high forceps was applied 11 hours after the rupture of the membrane, the patient having been 32 hours in labour altogether, and rupture of the uterus occurred. The author analyses his results very fully and states clearly his reasons for coming to the conclusions at which he arrives, and the book is a useful contribution to the literature of this important subject.

The Muscles of the Eye. By LUCIEN HOWE, M.A., M.D., Professor of Ophthalmology, University of Buffalo, &c. Vol. II., Pathology and Treatment. London and New York: G. P. Putnam's Sons. 1908. Pp. 481. Price 16*s.* net.

THIS volume completes Professor Lucien Howe's treatise on the muscles of the eye, the first volume of which, dealing with anatomy and physiology, we have already reviewed. We think that the second volume is better than the first and forms an excellent guide to the advanced student of the subject. It would have been easy for the author to be led astray by the extravagant views which are widely held by his own compatriots as to the far-reaching importance of errors in the muscular balance of the eye in the causation of general disease. On the other hand, we find that he has been judicial in his estimates of their place in pathology, and whilst adopting a conservative attitude yet retains an open mind capable of appreciating all the evidence at its just worth. He discusses successively ocular muscular imbalance, deviations due to lesions in the extra-ocular muscles or in the globe (strabismus), deviations due to lesions in the brain or in the nerves (the paralyses), atypical movements—inflammations and injuries of the muscles, and operations on the muscles. The classification is open to criticism, particularly that of strabismus under deviations due to lesions of the ocular muscles or in the globe, but it is one of convenience rather than pathological accuracy, and the text shows that the author fully appreciates the part played by the higher nervous centres in deviations of this nature. Ocular paralyses are discussed least fully and almost entirely from the specialist's point of view. The neurologist would scarcely be satisfied with this section.

The bibliography brings the total of references up to 2000 and will prove of great value to future workers in this branch of ophthalmology.

Traité de l'Alimentation et de la Nutrition à l'État Normal et Pathologique. By Dr. E. MAUREL, Professor in the Faculty of Medicine of Toulouse. Vol. II. *Les Rations à l'État Normal.* Paris: O. Doin. 1908. Pp. 666. Price 14 francs.

THE second volume of this treatise, which deals with diet in health, is based chiefly on the author's own experiments upon himself, controlled by observations upon animals. The results obtained by other workers are, however, sufficiently considered. He sets out to establish the mean diet necessary for subsistence or equilibrium of nutrition (*ration moyenne d'entretien*) and concludes that the following are the quantities of the different foodstuffs which are needed for each kilogramme of body-weight: proteins, 1·50 grammes; fat, 1 gramme; 0·50 gramme of alcohol; and 4·50 grammes of carbohydrates. This amount would be equivalent to 38 calories per kilogramme. An adequate diet for an adult is furnished by three litres of milk; indeed, some subjects put on weight when thus fed. The waste of the food actually taken by excretion of unabsorbed substances is about one-tenth of the whole amount ingested. The quantity of oxygen necessary for the due combustion of the food is about 12 grammes per kilogramme. The water needed by the human organism is next considered, and it is found that from 35 to 40 grammes are needed for each kilogramme of weight; of this amount about five grammes are furnished by the combustion of the hydrogen in the diet, while of the remainder about half is contained as moisture in the food and the other half must be drunk separately. The elimination of this quantity of water takes place as follows: from 15 to 20 grammes by the urine, from 1·50 to 2 grammes by the fæces, and of the remainder approximately equal amounts by the skin and the lungs. Of salts the following quantities are needed per kilogramme of weight: 0·25 to 0·30 gramme of sodium chloride, 0·06 gramme of potassium, 0·015 gramme of calcium, 0·005 gramme of magnesium, 0·002 gramme of iron peroxide, 0·05 gramme of phosphoric acid, and 0·06 gramme of sulphuric acid. Subsequent chapters of the book deal with the amounts needed by the adult woman and by the growing infant and in the declining periods of life, while some tables are given setting out diets suitable at various ages.

The book is a valuable summary of the author's work and must be taken into account by all who are interested in the subject with which it deals. Recent experiments in America and elsewhere have tended to throw doubts upon some of the accepted standards of dietary requisites and the last word is not by any means said upon this elementary point in physiology. Hence we welcome Dr. Maurel's contribution to the subject and congratulate him upon the book which he has produced.

LIBRARY TABLE.

Abdominal Pain, its Causes and Clinical Significance. By A. ERNEST MAYLARD, M.B., B.S. Lond., Surgeon to the Victoria Infirmary, Glasgow; late Examiner in Surgery to the University of Glasgow and Victoria University, Manchester, &c. Second edition (revised). London: J. and A. Churchill. 1908. Pp. xi.–301. Price 7*s.* 6*d.* net.—The first evidence of existence afforded by the majority of abdominal morbid conditions is pain, and it is therefore of the utmost importance that both surgeons and physicians should be able to appreciate the value of the various sites and varieties of abdominal pain, and the conclusions that may be drawn. In many cases pain in the abdomen may be the only symptom, and hours or days may elapse before any physical signs may be detected; yet on the treatment adopted in this interval may depend the safety of the patient. Within recent years surgery has done much to elucidate the cause of pain in the abdomen. Dr. Maylard divides abdominal pain so far as its method of production is concerned into, first, that produced by muscular spasm of a hollow viscus; secondly, that caused by irritation or inflammation of a mucous membrane resulting from microbic or chemical irritants; thirdly, that due to the increased tension in encapsuled viscera; fourthly, the pain caused by the pressure of tumours or aneurysms; and fifthly, the pain resulting from irritation of the parietal peritoneum. The author considers that there is really such a thing as visceral pain and that only some abdominal varieties of pain are referred. The method of examination of the abdomen is described and then the pain associated with each organ in turn is discussed. Regional pains are also considered, such as pain in the back or in the right iliac region, and the various conditions which may cause these local pains are described. By no means the least interesting chapters are those dealing with post-operative pain. Few things are more annoying to the surgeon than to find persistent pain following an operation otherwise successful. Dr. Maylard divides post-operative pains into those caused by the incision, ligatures, and sutures; those due to flatulence, peritonitis, and adhesions: and those special to the particular operation

performed. We have derived much pleasure from reading this book; it is decidedly suggestive and should prove helpful to all those who are called upon to deal with pain in the abdomen.

The Diagnosis and Treatment of Intussusception. By CHARLES P. B. CLUBBE, Honorary Surgeon to the Royal Prince Alfred Hospital; Honorary Surgeon to the Royal Alexandra Hospital, Sydney; Joint Lecturer in Clinical Surgery at the University of Sydney. Edinburgh and London: Young J. Pentland. 1907. Pp. 92.—Intussusception was recognised in the time of Hippocrates and abdominal section was suggested by Praxagoras, but it was not till 1871 that we can find any record of a laparotomy for the treatment of this condition; in that year Mr. Jonathan Hutchinson had a successful case. In most hospitals, in London at least, the treatment by injection has practically disappeared, but while Mr. Clubbe in this valuable little book agrees that operation is the best treatment, he points out the value of irrigation in making more simple even those cases in which it does not effect reduction. His opinion is based on 124 cases and this number has fallen to the lot of few surgeons, and therefore his opinion deserves careful consideration. Mr. Clubbe has the child prepared for operation and anæsthetised and then he injects warm olive oil or hot saline solution into the bowel. If the tumour can no longer be felt after careful search the child is sent back to bed, but he is watched for any sign of recurrence. If after injection a tumour can still be felt the operation is commenced. There is no doubt that judicious injection may reduce the size of an intussusception and thus the operation may be shorter and simpler. Mr. Clubbe has found it necessary to resect eight times and only one of these cases recovered. The diagnosis of intussusception is more readily made at present by those who see the children first and therefore operations are now done at an earlier age than formerly, and this is no doubt the chief reason for the reduction of mortality from the condition. Mr. Clubbe's work is a useful contribution to an important subject.

Christmas Cards, &c.—It is difficult to say anything new concerning the excellent productions of the house of Raphael Tuck and Sons, of Moorfields, London, E.C., a selection of which has again reached us. Year by year their annual parcel of Christmas and New Year cards, calendars, toy-books, postcards, and other art novelties arrives, and on each occasion Messrs. Tuck contrive to excel their previous achievements, and to produce some special feature with which further to adorn their artistic wares. This year they offer to their patrons as their special feature the "Royal collection" of cards, originally painted by them last season for four crowned heads and their consorts, and for the Prince and Princess of Wales, and also the last card painted by them for Queen Victoria. The cards forming this collection are sold at 6*d.* and 1*s.* each, and are good examples of Messrs. Tuck's best efforts. The other cards provided by this firm comprise some 2000 sets of entirely new and original designs, costing from 1*d.* upwards, and the choice of a suitable card to meet individual requirements may therefore be said practically to be assured. The several calendars and toy-books are also to be commended.

JOURNALS AND MAGAZINES.

Journal of Laryngology, Rhinology, and Otology. September and October, 1908. London: Adlard and Son. Price 2*s.*—Dr. Guisez of Paris contributes an interesting paper in the September number on Actual Results of Œsophagoscopy: 1. Extraction of Several Foreign Bodies of Irregular Shape (Dental Plates); Spasm of Cardia (Cardio-spasm) of Severe Nature (Diagnosis and Treatment). The title of this paper is so complete that no further notice is required. Dr. Stucky of Lexington, Kentucky, reports in the October number a case of Septic Thrombosis of the Cavernous Sinus following a radical mastoid operation on the seventh day, giving the history of the case, and the report of the necropsy. This is a very instructive case of a somewhat rare complication or sequela of septic intracranial trouble and is worth careful study. A third paper is by Dr. Price-Brown of Toronto and is entitled Notes upon Two Unusual Frontal Sinus Cases. An article entitled Two Points in the Development of the Middle Ear and its Contents, by Mr. Thomas Guthrie of Liverpool, completes the original matter in these numbers.

The Quarterly Journal of Microscopical Science. Edited by Sir E. RAY LANKESTER, K.C.B., F.R.S., with the coöperation of ADAM SEDGWICK, F.R.S., SYDNEY J. HICKSON, F.R.S., and E. A. MINCHIN, M.A. With lithographic plates and text figures. New Series, No. 208 (Vol. LII., Part 4). London: J. and A. Churchill. October, 1908. Price 10*s.*—This part contains the following memoirs: 1. The Yellow-brown Cells of Convoluta Paradoxa, by Frederick Keeble, Sc.D., Dean of the Faculty of Science and Professor of Botany in University College, Reading, with three chromolithographs. The convoluta paradoxa is found within a narrow belt of seaweed on the shore and exhibits tidal migrations. The egg-laying and hatching are periodic and synchronise with neap tides, and the eggs and just-hatched larvæ have no yellow-brown cells and do not present any, if preserved from infection, but if brought into relation with seaweed from the paradoxa zone become infected. The infecting organism is different from the zooxanthella of Radiolarians; it multiplies rapidly in the body of convoluta paradoxa. The fat globules of the algal cell are food reserves; after ingestion they become an integral part of the animal, contribute to its nutrition, and are indispensable to its development. Speaking generally the yellow-brown cells utilise in their constructive metabolism the waste products of the nitrogen metabolism of the convoluta paradoxa. It is a case of obligate parasitism. 2. On the Diplochorda, by A. T. Masterman, M.A., D.Sc. The author shows that ingestion is affected by ciliary currents and gives a plate presenting figures of the pharynx, stomach, and intestines of this echinoderm larva. 3. The Structure, Development, and Bionomics of the House Fly, Musca Domestica (L.). Part 2, with four plates. By C. Gordon Hewitt, M.Sc., Lecturer in Economic Zoology, University of Manchester. This paper deals with the breeding habits and development of the fly, and the anatomy of the mature larva is described in considerable detail. Mr. Hewitt found that horse manure is preferred to all other materials by the female fly for oviposition. At 35° C. the development of the larva is completed in eight or nine days. With a constant daily temperature of 22° C. the ova kept in horse manure in a rather dry condition took 30 days to complete the development, but if kept moist it was completed in 13 days and larger flies were produced. Fermentation in the substratum, probably by maintaining a high temperature, was favourable to rapidity of development. Each fly may lay from 120 to 150 eggs. There are three larval stages and then the pupa is formed, during which the tracheal system is lost. The muscular and nervous systems of the larva of the house fly are fully given.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held at Caxton House, Westminster, on Oct. 15th, Dr. F. H. CHAMPNEYS being in the chair.

A letter was considered from the Registrar of the General Medical Council, inquiring whether the Board contemplates taking proceedings against the registered medical practitioner whose action in giving a certificate of good character

to a woman convicted of manslaughter and sentenced to three years' imprisonment had been brought to the notice of the Council by the Board. It was decided to seek the advice of the Privy Council as to whether the Board should prosecute in cases of this sort.

A letter was considered from the medical officer of health of Manchester inquiring the reasons of the Board's decision as to the inexpediency of amending the Midwives Act so as to bring monthly nurses within the scope of the Act. It was decided to inform the medical officer of health of Manchester that the Board sympathises with the efforts made to safeguard the practice of monthly nurses, but that the administrative difficulties involved in adding the supervision of monthly nurses to that of midwives appear to the Board to be insuperable.

A letter was considered from Mary Craingold of Manchester asking to be allowed to enter as a candidate for the Board's examination in the Yiddish tongue, and letters from Mr. J. Potashin of Manchester and from the medical officer of health of Manchester were considered on the same subject. It was decided to answer that the Board regretted that it was unable to comply with the request made.

A letter was considered from the clerk of the Leicestershire county council as to the difficulty experienced by its scholarship candidates in passing the Board's examination. Mr. T. Robinson, county medical officer of Leicestershire, had attended and addressed the Board, suggesting that candidates might be allowed to pass a local practical examination instead of the present system of a written and oral examination at certain prescribed centres. It was decided that the attention of the county council should be called to the high percentage of failures of its scholarship candidates as compared with those from other training centres, and that it should be suggested that an improvement might be obtained by lengthening the period of training.

A letter was considered from the medical officer of health of Sheffield, suggesting an amendment of Rule E 5. It was decided that the medical officer of health of Sheffield should be thanked for his letter and informed that the matter had been noted for consideration on the next revision of the rules.

A letter was considered from the county medical officer of Lancashire as to an advertisement displayed by a woman whose name had been removed from the Roll by the Board under its penal powers. It was decided that the Board would advertise in the same paper in which the advertisement complained of appeared, stating the fact and the circumstances of the removal of the woman's name from the Midwives Roll.

A letter was considered from a certified midwife inquiring whether the delivery of twins counted as two cases to a pupil. It was decided to inform the midwife that the delivery of twins counted as one case only to the pupil.

A letter was considered from the clerk of the Worcestershire county council requesting the Board to advise what action, if any, could be taken where a series of cases of pemphigus occurred in the practice of a midwife. It was decided that the Privy Council should be requested to ask the Local Government Board to undertake the investigation of the case by the best scientific expert at its disposal, and that the Worcestershire county council should be informed thereon.

A letter was considered from a certified midwife inclosing a copy of a letter addressed to her by a registered medical practitioner as to the payment of his fee in a case to which he had been summoned on her advice. It was decided that a copy of the correspondence should be forwarded to the Privy Council, and also a copy, with the names of the parties deleted, to the clerk of the Wandsworth board of guardians.

A letter was considered from the clerk of the Privy Council as to the payment by the guardians of the fees of medical practitioners summoned on the advice of midwives. It was decided that the clerk of the Council be thanked for his letter. The main points of the letter were as follows:—

A Mr. ——, medical man, of ——, wrote to the Privy Council Office on August 8th last complaining that the guardians of the —— union had refused to pay his fees in cases in which he was called in by midwives. Inquiries were made and it was elicited that in two cases the patients were willing and able to pay the charges; a third case was adjourned by the guardians for further information, when, on July 18th last, Mr. —— requested the guardians to return the "emergency tickets" to him, which was done. Mr. —— has been informed that in their lordships' opinion he was very ill-advised in making the action of the guardians a cause of complaint before he had ascertained whether the patients were in a position and willing to pay.

New Inventions.

A PORTABLE ILLUMINATIVE ATTACHMENT FOR THE OPHTHALMOSCOPE.

A NEW contrivance which I have devised as an illuminative attachment for the ophthalmoscope was shown at the Ophthalmological Society's meeting in May and at the Oxford Ophthalmic Congress. It has been made for me by Messrs. King and Company of Bristol, the London agents being Messrs. John Weiss and Sons, Limited.

It consists of a metal cylinder inclosing a suitable electric bulb, treated to prevent the image of the filament from being thrown on the cornea, and placed at the proper focal length from the condensing lens which is of a Coddington type; this is connected by a double-jointed arm to a clip which can be permanently or temporarily affixed to the ophthalmoscope. When in position it can be folded for the pocket, extended for focal illumination, and correctly placed to illuminate the ophthalmoscope mirror, which should be tilted as the ordinary small mirror is, and placed looking downward towards the handle of the ophthalmoscope. The apparatus connected by a flexible insulated cord to a 20-hour pocket accumulator (which can be recharged at any electrician's) throws a beam of light enabling a good view of the fundus oculi to be obtained, even under adverse circumstances, such as when the patient is in bed unable to sit up. As the light moves with the ophthalmoscope it can be held in any position, and with the handle depressed and pointing outwards, and the cylinder resting lightly against the patient's cheek in an oblique direction, it can be approached close to the eye for examination of the fundus and contents of the globe by the "direct method." It is also specially useful at times and places where the elaborate lights of the consulting-room are not available, for with it attached to the ophthalmoscope the surgeon is independent of all other sources of illumination.

Clifton. CLEMENTS HAILES, M.D. Edin., F.R.C.S. Edin.

"ALBICAUD" CATHETERS.

Messrs. S. Maw, Son and Sons, 7–12, Aldersgate-street, London, E.C., have sent us a specimen of a new form of catheter which they have recently introduced. It is creamy white in appearance and therefore any soiling can readily be seen. The end is solid; the catheter has a hard surface and yet it is very supple. At the present time it is recognised that heat is the best steriliser, and as asepsis of the urinary passages is of supreme importance those catheters are the best which can be sterilised by boiling. We have boiled the specimen catheter and it has stood the trial well. Of course, there is a limit to the number of times a catheter can be boiled, but it is well never to employ a catheter for a long time. The cost is not high and varies from 12*s.* to 19*s.* a dozen, according to the form of the catheter. We consider the "Albicaud" catheter to be a useful invention.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Oct. 30th, 1830.

MEDICAL OFFICERS IN THE BRITISH NAVAL SERVICE, OCTOBER, 1830.

Physicians	12
Surgeons retired on full-pay	53
Surgeons ready for active service	725
Assistant-Surgeons ditto	357
Dispensers of hospitals	12
Hospital mates	3
Total	1162

WESTMINSTER HOSPITAL.

AT a general meeting of the governors on Wednesday last, it was decided by a majority of sixty-two to twenty-seven, that the building should not be erected at Charing Cross. A ballot was demanded. The longer we contemplate the scheme for the "removal" the more does it assume the appearance of a JOB.

THE LANCET.

LONDON: SATURDAY, OCTOBER 31, 1908.

The Report of the Joint Select Committee on Lotteries and Indecent Advertisements.

THE Select Committee, composed of five members of the House of Lords and a like number from the House of Commons, which heard evidence in the early part of the summer upon the subject of lotteries and of indecent literature, pictures, and advertisements, has issued its report, and if the Government proceeds to carry into effect in a vigorous manner the suggestions made as to the amendment of the existing law on these subjects, the result should be one of considerable importance to the moral and physical welfare of the nation. With the question of lotteries THE LANCET is little concerned, whether they take the form of official or quasi-official issues by foreign governments for the purpose of "raising the wind," advertised and circularised in this country, or of "competitions" in British newspapers organised for a similar purpose. It is satisfactory to read, however, that as to both these classes of gambling the witnesses before the committee were almost unanimous in their condemnation of them, and that the committee considers the existing law strong enough to deal with the sale of foreign lottery tickets if strengthened in certain details which it suggests. With regard to what may be termed journalistic lotteries, it had laid before it a considerable body of evidence and heard the system upon which the prizes were allotted in the now extinct "limerick" competitions explained by witnesses of whose practical experience and integrity there could be no doubt. From one of these, moreover, who might have been supposed to be in sympathy with such methods of increasing the circulation of newspapers and periodicals if a natural inference were to be drawn from their prominence in some of the publications under his control, the committee heard a strong and clearly expressed denunciation of the whole system. The principal result with regard to this branch of the committee's inquiry is a recommendation "that it should be made illegal for any proprietor, publisher, or editor of any newspaper or periodical to charge any form of entrance fee, including the purchase and return of coupons, for prize competitions in his paper." This does not touch competitions in respect of the sale of articles of trade but so far as newspapers and periodicals are concerned it seems likely that in the future any substitute for limerick competitions that may be devised will have to enjoy a limited and, let us hope, a not unwholesome popularity. At all events, under the restrictions proposed, it will not result in office boys and servant girls squandering their wages in the futile hope of winning life incomes or motor-cars, and editors will have to rely for their circulation upon the provision of suitable reading matter rather than upon the artificial stimulus to purchase produced by the desire to acquire "coupons."

In catering for their public, however, those responsible for some newspapers and periodicals will find themselves even more heavily handicapped, should the recommendations of the committee become law, than those who have had recourse to the limerick or such like competition and who in many cases have a large circulation and a large and respectable *olientèle* of advertisers independently of such adventitious aids. Indecent illustrations or illustrations suggestive of indecency exhibited in the lowest class of periodicals, on post cards and similar productions, and in what are known as "mutoscopes," a modern development of the "peep show," have increased noticeably in recent years, and the advertisements in publications of the class mentioned have been of a corresponding character. Among those recommending for purchase pornographic literature and indecent photographs, open advertisements of preventives of conception have been conspicuous, and the quack abortionist, although his puffing of his wares has been forbidden in ordinarily respectable newspapers, has increased his trade with impunity by the connivance of others less decently conducted. It is with this last branch of the committee's inquiry that THE LANCET is most directly concerned, because when the CHRIMES brothers were prosecuted we were already publishing the series of articles which in 1898–99 exposed the evil of such advertisements in detail, and because the publication of those articles, combined with the trial referred to and that of "Madame FRAIN," rendered it impossible for any newspaper to admit such advertisements in ignorance of their import, of their possible danger, or of the stigma attaching to their publication. With regard to the question of the publication of indecency the work of the committee was divided into two branches. It has had to consider the possibility of enlarging the subject of prosecution so as to include things which under the existing law and the established traditions of its enforcement have escaped scot-free, and also of increasing the efficiency of the legal machine by rendering its procedure less cumbrous and therefore more readily applicable to the suppression of that which, without deserving to be described as grossly obscene, is nevertheless indecent, and to use a word employed frequently before the committee is essentially "demoralising."

The criminal law rightly and justly is technical and exact, with the disadvantage that sometimes a person deserving punishment cannot be convicted because the right steps have not been taken to that end, or because his offence, although analogous to those which are punishable, has not been included among them. In this connexion the committee learnt that an indecent advertisement may not be thrown down an area, but that the penalty for doing so is not applicable to those who place the same matter in a letter-box; that indecent literary matter must still be set out in full when one who has sold it is prosecuted, although it may fill a substantial volume in print, and although the draughtsman is relieved of this burden

when he draws an indictment against the publisher of the same matter. The procedure open to the police when they desire to prosecute is of various descriptions. They can indict for a common law misdemeanour anyone who sells or publishes indecent literature or pictures or who procures such things for sale, but apparently cannot do so if he is only proved to have them in his possession, even though this is obviously with the intention of selling them. These are instances of technical loopholes of escape for the accused but his best protection has consisted in the fact that in order to punish the obvious and usual offences arising out of the publication or sale of indecent matter or pictures it has been necessary to proceed by indictment before a jury and the magistrate has only had power to commit the offender for trial; he has not been able to sentence him himself. Consequently he has not been asked to deal with cases of minor gravity, and that which is "demoralising" rather than "obscene" has not been submitted to him, unless the culprit has been inveigled into sending the objectionable matter by post, when the Post Office Protection Act, 1884, may be invoked, or unless some other special statute allowing the exercise of summary jurisdiction has been found to apply.

The committee, while recognising the usefulness of these statutes to which recourse may be had in appropriate circumstances, recommends a new Bill providing a uniform method of procedure by which cases of the kind referred to may be dealt with summarily. The same Bill would provide also for contingencies previously overlooked by the parliamentary draftsman or arising out of conditions not before existing, and the committee appears to think that magistrates would regard cases as coming within their power to punish which they would hesitate to send for trial, so that no fresh definition of obscenity or punishable indecency is attempted. The committee, however, in respect of one specific matter, makes a very important recommendation which, coupled with the institution of a summary jurisdiction, should have a far-reaching effect. It advises that the advertisement and sale of drugs or articles which might reasonably be considered as designed for promoting miscarriage or for procuring abortion should be made illegal, and also that it should be made illegal to advertise drugs or articles designed for the prevention of conception. In considering this branch of its subject it had before it several witnesses, one of whom, Mr. W. P. BYRNE, C.B., Assistant Under Secretary of State in the Home Department, said in the course of his evidence: "THE LANCET some years ago conducted a scientific inquiry into the nature of the remedies that were advertised in this way and reported fully upon them. Although some of them were found to be harmless and ineffectual, it was nevertheless found that quite a large number of them were injurious and were calculated to produce the object for which they were advertised, and the authorities of that paper made an earnest appeal to the Home Secretary to deal with this very great evil by legislation to absolutely prohibit advertisements as to female remedies. Of course, that is a matter which the committee will no doubt consider. It is alleged, on the other hand, that you cannot possibly prohibit these advertisements altogether without doing away with legitimate sales and with the legitimate advertisement of useful drugs. On the other hand, of course, it may be alleged that it would be quite easy to exclude legitimate advertisements from any legislation." Mr. BYRNE went on to say that the inventor of a drug would naturally desire to bring it to the knowledge of the medical profession and the trade. All his legitimate purposes could be met by his advertising in trade organs, in medical journals, and in other papers which reach the medical profession. He thought that it would be impossible that advertisements of these matters should be allowed to appear in the ordinary papers, especially the papers that reach the poor, without leaving the whole difficulty exactly as it is at present.

It is gratifying to us to learn that the effort which we made to explain and to expose the facts of an infamous traffic was noted by the responsible authorities and that it should promise to bear fruit, though after a somewhat long interval. We are, moreover, interested to read, on the authority of Mr. BYRNE, that the law officers of the date when our articles were published had under consideration, and indeed drafted, a Bill which, however, was not presented in Parliament. We are inclined to gather that the failure of the Government to bring it forward was due to an uncertainty, apparent in the quotation which we have made from Mr. BYRNE'S evidence, which careful perusal of the articles in THE LANCET on "Quacks and Abortion" should have removed and as to which a medical witness or two might have given valuable evidence before the committee. As we wrote in THE LANCET of Feb. 4th, 1899, p. 327, of these abominable advertisements, "the veil of pretended cures for amenorrhœa has protected them." We had then already, in THE LANCET of Dec. 24th, 1898, p. 1723, demonstrated that a demand for cures for amenorrhœa, independently of the pregnant woman anxious to be rid of her pregnancy, cannot possibly exist. Amenorrhœa is not a condition akin to constipation of the bowels, for which, however undesirable they may be, popular remedies are deemed appropriate for popular use. The trade which is used as a "veil" does not exist and never has existed but has been conjured into imaginary existence by the ingenuity of quacks and charlatans of a most pernicious description. Mr. W. A. COOTE of the National Vigilance Society laid a useful definition before the committee when he suggested that penalties should be provided for "any advertisement relating to any disease affecting the generative organs of either sex or to any complaint or infirmity arising from or relating to sexual intercourse, or to the treatment of any complaint or condition peculiar to females, or to the removal of irregularities in menstruation and any advertisement relating to drugs, medicines, appliances or treatment for procuring abortion or promoting miscarriage or preventing conception, or which might reasonably be construed as relating to any illegal medical treatment or to any illegal surgical operation." This seems to us to be fairly comprehensive and we sincerely hope that whenever the law is amended it will be made clear and comprehensive so that the trade of the advertising charlatan may be not scotched but killed, as it will be if his power to

advertise is taken away, together with that of the advertiser of preventives of conception, whether they puff their goods in the newspapers or obtrude them into families by means of the post. We need hardly add that the committee recommends a provision in any new legislation for the protection of medical men and of registered druggists acting *bonâ-fide* in the ordinary course of their profession or business, as also it would except from the operation of the proposed Act any book of literary merit or reputation or any genuine work of art. We shall await with considerable interest the legislative proposals to be introduced by those responsible for the appointment of the committee.

Sanitary Reform in India.

WE published in our last issue an address which deals with a sanitary problem of literally tremendous proportions and which appears to us to be as remarkable as it is auspicious. We call this address remarkable in that it was delivered by a man of no special medical knowledge, and auspicious because that man is the responsible administrator of an important province of the Indian Empire and because it contained his confession of faith that in a strenuous and perpetual sanitary campaign lies the truest hope of the Empire's welfare. We will briefly recall the events that led to its delivery. Towards the end of last year the Government of India addressed to all its local governments and administrations a circular letter upon the subject of sanitary reform. We published the document in full as the first of our series of articles upon Sanitary Reform in India (Feb. 22nd, 1908, p. 582) and we need only repeat that it called upon the heads of provinces to take counsel with representative officials and prominent native gentlemen under their respective administrations as to the most effective means of instituting a reformed sanitary service throughout India, and to advise the Governor-General in Council on the outcome of their deliberations. Sir JOHN PRESCOTT HEWETT, Lieutenant-Governor of the United Provinces of Agra and Oudh, delivered the address to which we refer on the occasion of the conference convened by him in fulfilment of the mandate of the central Government. We hope that his summary of the sanitary problem in India may be read as a fair example of the addresses delivered by his fellow Governors at similar gatherings, for it not only shows a close and statesmanlike grasp of the many-sided question but a right and rare acknowledgment of the claims of preventive medicine to the respect and confidence of the State.

He began by showing the necessity of coöperative, no less than personal, sanitation and then acknowledged the vastness of the subject, of which he said that "few, if any, of the activities either of the individual or the State are not affected by it," a maxim that might well be taken to heart by legislators nearer home. He then dealt with the vital statistics of India, especially those recording the causes of death, pointing out that under present conditions of registration these cannot possibly be accurate, but that the expectation of life of an Indian adult was probably not more than 68 per cent. of that of an Englishman. He passed on to a consideration of the special natural features of his own province which are inimical to health—such as its extensive mileage of flat lands, liable, as they are, to be waterlogged during the rainy season, and the wide daily variations of temperature—and the more serious preventable conditions which are a constant menace to the public health—the gross overcrowding of cities and the insanitary practices of the people both in town and country. As an object-lesson in contrast to this he quoted the low death-rate amongst the jail population of India, and it is a striking reflection upon the "paternal government" of the country that those who have disobeyed its laws are brought in the course of their consequent punishment into forced obedience to the "natural" laws of health, and are thus placed at a truly vital advantage over their more orderly brethren. Those who keep the peace and live at home are at liberty to disregard Nature's ancient and universal statutes because no Indian sanitary service is yet in being which can compel their observance, and year by year they pay the inevitable penalty of disease and death, and pay it not in their thousands but in their millions. But no one has a keener appreciation of this remorseless law than the able administrator with whose address we are concerned, and it must have been a relief to him to point to the great increase in expenditure in his province which he has been able to sanction of recent years upon municipal sanitation and which has resulted in the marked restriction of cholera, dysentery, and diarrhœal diseases. Another bright spot upon his dark picture was the decline in the death-rate from small-pox owing to the spread of vaccination, but Sir JOHN HEWETT was forced to show its gloomiest aspect in speaking of the appalling ravages of malaria, tuberculosis, plague, and infantile diseases, including especially the epidemics of measles of late years. In Cawnpore, for instance, the average death-rate amongst infants for the last five years has been 365 per 1000, a fact which we consider sufficient of itself to justify the creation of a new sanitary service in India. It is better reading that plague in the United Provinces is on the decline and that the birth-rate is increasing.

The last part of the Governor's survey was devoted to a consideration of how the problem may be solved, and Sir JOHN HEWETT crystallised his conclusion of the whole matter into a memorable phrase: "We can never move over the people: we must move by and through them," a phrase the deep significance of which anyone who is acquainted with the story of British rule in India will recognise. It is in the enrolment of educated Indians in the new service and in the diffusion of sanitary principles from them amongst all classes of the Indian people that the hope for the future lies. Turning to the housing question, which is even more difficult in India than with us, Sir JOHN HEWETT said truly enough that the governments could not afford to build sanitary houses for millions upon millions of their subjects, but they could build in different towns a few houses which would serve as models for the requirements of different classes and trust to an enlightened public opinion to copy them. Such opinion moves slowly in the East but recent affairs in India have proved that a leaven is stirring within it which for good or evil must profoundly influence the destiny of the country. Here is a chance for "young India" to show itself imbued with the truest patriotism, by preaching the

gospel of cleanliness and health under the banner of Government instead of the treason of sedition and strife, and so to insure the success of a service in which the British Raj is prepared to give to the natives of the country an honourable and responsible part. The Government will not rest content with vague theorising but will introduce a definite and practical measure of reform based on the best advice at its disposal, and in earnest of its intentions the Lieutenant-Governor of the United Provinces reminded his audience that the Government of India had made him a special grant of five lakhs of rupees (£33,000) a year to expend on extraordinary sanitary improvements. His intention to use part of this grant in relieving the congested areas of certain towns, such as Allahabad, Lucknow, and Cawnpore, by cutting large roads through them, shows that he is fortunate in his sanitary advisers. In such beneficent works a ruler will live long after his acts which at the time seemed more glorious have been forgotten. TARQUINIUS PRISCUS in the early days of Rome fought valiantly with his Sabine enemies and gained his meed of martial honours, but he built also the Cloaca Maxima, and to this day though his victories are buried in an ancient page of history that great sanitary work still fulfils a useful purpose and stands as a wonderful memorial of his kingly rule. Indian administrators may well take to heart the lesson of that enduring monument, and the lesson as we read it is this, that the right-hand man of the head of a province who has his people's interest at heart must be always his principal sanitary adviser. Sir JOHN HEWETT'S address proves him to have learnt that lesson. When the rulers of England have learnt it Medicine may, in this country as in India, begin to come into her own.

The Disease-Producing Milk-Supply of a Great City.

THE discussion which took place recently at the International Congress on Tuberculosis at Washington, when Professor KOCH endeavoured to justify with some modification the remarkable pronouncement which he made in London in 1901, should have the effect of entirely dispelling the misconception that the risk of contracting tuberculosis from the consumption of the milk of tuberculous bovine animals is a negligible quantity. The balance of evidence was overwhelmingly against the great German pathologist, and although we are not yet in a position to estimate the amount of tuberculosis in human beings which is attributable to the ingestion of tuberculous milk, it must be accepted that the danger, especially for infants, is a very great one. The risk would also appear to be emphasised from much recent work with regard to the portals of the human body through which the tubercle bacillus, whether of human or bovine origin, obtains an entrance. Certainly the inference to be drawn from the experimental work of the last few years is that the intestinal tract is a far more frequent channel of entry than was formerly supposed, and, without going so far as Professor VON BEHRING, it is clear that if the intestinal tract is a highly important, if not the main, channel of entrance the risk from the consumption of tuberculous milk becomes correspondingly enhanced.

But the great danger which is to be anticipated from tuberculous milk is by no means the only consideration which is to be held in view with reference to our milk-supplies, and this fact has been recently brought out with great clearness by Professor S. DELÉPINE when examining for tubercle bacilli the milk-supply of Manchester, a city with a population of nearly 650,000. In the first place, it may be pointed out that at present the daily milk-supply of Manchester amounts to about 62,525 gallons, of which apparently only about 3000 gallons are produced in Manchester itself, a fact which affords illustration of the necessity for reform in the existing method of milk control over the country as a whole. In the case of Manchester a substantial advance was made several years ago by obtaining from Parliament what are known as the Manchester Milk Clauses, by virtue of which milk found on examination in the city to be tuberculous may be traced to its source outside the city limit by the municipal officials and the cow or cows found to be tuberculous withdrawn from the milk-supply of Manchester. It is largely by virtue of the powers thus conferred that the work carried out by Professor DELÉPINE has been practicable. During the years 1897 to 1906 inclusive Dr. JAMES NIVEN, the medical officer of health, has sent to the public health laboratory 4596 samples of milk to be examined for the tubercle bacillus, and of this number 3650 (about one a day) were collected at the railway station on arrival from the country. Each of these samples represents the milk of several cows since the cans from which the samples were taken, and which hold about 17 gallons each, contain the mixed milk from several sources. From each sample about 40 cubic centimetres were taken and centrifugalised so as to obtain the bacteria and other foreign matter in the slime which is familiar to all those who use separators. Some of this sediment or slime was examined microscopically for tubercle bacilli and small quantities were inoculated subcutaneously into guinea-pigs. It was found as regards tuberculosis that when the sample contained a few bacilli, or bacilli of low virulence, the lesions produced by inoculation were slight, although they always contained the tubercle bacillus, and it was found that this inoculation test was much more trustworthy than the microscopical examination; in fact, had this latter method been alone relied upon the presence of tubercle bacilli would have been overlooked in 50 per cent. of the tuberculous samples. As the result of the work over ten years it was shown that of the 3650 samples tested by inoculation 9·3 per cent. contained virulent tubercle bacilli; in other words, 5780 gallons of the 62,000 gallons examined were actually capable of causing tuberculosis, and Professor DELÉPINE makes with certain reservations the interesting estimate that during the ten years referred to about 4660 gallons of tuberculous milk have been poured into Manchester daily, a condition of affairs which would, it is said, have been much worse except for the active measures taken by Dr. NIVEN in the removal of tuberculous cows from the Manchester milk-supply.

There is, however, a brighter side to the picture. The number of tuberculous samples which in 1897 and 1898 was 17·2 per cent. had in 1906 fallen to 6·6 per cent.—i.e., there were in 1906 no less than 5300 fewer gallons of tuberculous

milk than would *ceteris paribus* have been the case if the conditions of 1897 had been allowed to continue. But this is not all: not only has the actual amount of tuberculous milk markedly diminished but the virulence of the tuberculous milk which remains has been lessened, owing, it is thought, to the fact that only the mild cases of the disease in cattle now escape detection. Gratifying as these results undoubtedly are, Professor DELÉPINE is also able to show that the control exercised over the milk introduced into Manchester has had a good effect not only upon the tuberculous aspect of the milk but on other aspects as well. The amount of dirty milk is much smaller than formerly and the character of the slime derived from centrifugalisation is less pathogenic to guinea-pigs; otherwise expressed, Professor DELÉPINE finds a distinct average correlation between the amount of dirt and the pathogenicity of the milk, such pathogenicity being measured not only as regards tuberculosis but also in the degree of virulence of other lesions which are prone to occur in inoculated animals. Some capital charts illustrating these points are to be found in the report before us, different colours in vertical columns being employed to indicate the decrease in actually tuberculous milk, in milk producing other than tuberculous lesions, and in milk containing large amounts of sediment. Professor DELÉPINE is evidently quite satisfied that there are no fallacies in his argument and that as the same methods have been adopted throughout the data are quite trustworthy and comparable. Manchester is to be congratulated on this happy result, and as somewhat similar work is being carried out in certain other large towns we may hope soon to see equally good results elsewhere both in the diminution of tuberculous milk and in other ways. We hope, too, that all our large towns will soon possess the facilities for the control of their tuberculous milk-supplies which are already possessed by Liverpool, Manchester, and London and that they will make equally good use of them. We note in the *Times* of Oct. 26th that as regards London the Public Health Committee of the County Council is urging the Council to seek powers for extending the control which is now possessed with reference to tuberculous milk to milk which is dirty and contaminated—i.e., to place upon a legal basis in London the work which has apparently been carried out in a voluntary fashion in Manchester.

Annotations.

"Ne quid nimis."

THE TUBERCULOSIS PREVENTION (IRELAND) BILL.

THE Royal Academy of Medicine in Ireland recently convened a conference of 13 medical bodies throughout that country to consider certain amendments to the Tuberculosis Prevention Bill. These have now been drafted and forwarded to Mr. Birrell for his consideration. Whilst approving of the principle of compulsory notification they consider that the Bill will become inoperative if enacted without the incorporation of the following provisions:—

1. That county councils, separately or conjointly, must be compelled to appoint properly qualified medical superintendent officers of health, who would devote their entire time to the duties of their office and be competent to do bacteriological work.

2. That sanitary authorities, separately or conjointly, must be compelled to provide the means of disinfecting houses and clothing by appliances approved by the Local Government Board for Ireland.

3. That county councils, separately or conjointly, must be compelled to provide hospitals for the segregation of advanced cases of tuberculosis.

4. That a grant must be made from the Imperial Exchequer to cover at least half the expenses incurred by local bodies in working the Act, as otherwise the provisions of the Act could not be carried out.

In support of these provisions it is pointed out that at present there are in Ireland no medical officers competent for bacteriological work and milk and food examination outside the county boroughs; that rural sanitary authorities have no proper appliances for disinfection except in a few instances; that there is at present practically no provision of hospitals in Ireland for the vast numbers of advanced cases of tuberculosis in a dangerously infective stage; and that local sanitary authorities will not in most cases meet the expenses required of them under existing Acts dealing with infectious diseases, a fact which the memorialists consider makes Treasury assistance an imperative condition for the success of the measure. They further state that at present in many of the poorer unions in Ireland, "when an epidemic occurs, the clothing and bedding of patients and nurses are burned because the sanitary authorities will not spend money on the provision of proper appliances for disinfection." The secretary, in concluding, addresses Mr. Birrell in these words: "I was instructed by the conference to state to you quite definitely that unless the four important requirements mentioned in their reports were provided for in the Tuberculosis Bill the responsibility of passing what in their opinion will be for all practical purposes a worthless measure must rest with the Government."

"CHEMICALS."

THE word "chemical" conveys to many minds a substance that is objectionable, especially when it is associated with articles of drink, food, or clothing. "Preserved with chemicals," "coloured with chemicals," "flavoured with chemicals," "glossed with chemicals," are expressions which may be used disparagingly with some justification when injury to health or material is implied. There are, of course, preservatives which are injurious to health and there are also colouring flavourings which are not exempt from the same charge, while the glaze of the tablecloth, napkin, shirt-front, or cuff is obtained in many instances at the expense of the material. Anilines, synthetic essences, bleaching powder, borax, and so forth, are sufficiently accountable for such evils, and these things being "chemicals" have brought that word into general opprobrium. It is easy enough, however, to show that there are many articles which are received favourably by the public and yet which are just as much "chemicals" as are the substances included in the preceding category. What objection, for example, is raised against the use of salt because it is a "chemical," and what else is it? If, again, the word "chemical" implies an abhorrent substance, what justification can there be for the popularity (deplorable as it may be) of a "whisky-and-soda"? Soda water is eminently a "chemical," for it is merely a saturated solution of carbonic acid gas in water. The water may be of natural origin but the gas is certainly not so. It is obtained in several ways, all of which are "chemical." The gas, for example, is obtained in some cases by burning coke, in others by acting on chalk or sodium carbonate with an acid. Even the whisky itself may be regarded as a chemical, since it is the product of distillation and consists chiefly of alcohol which is a chemical substance. What greater modern necessity of life, again, can there be than soap, and yet soap is a "chemical"? Even cheese may be included

in the category of "chemicals," for, after all, it is the nitrogenous substance of milk separated by the addition of acid. Instances could easily be multiplied illustrating how many household articles are after all "chemicals," but no more need be mentioned to show that a "chemical" is not necessarily a dangerous substance, the word, however, being commonly and often wrongly used in that sense.

TREPHINING IN THE TREATMENT OF URÆMIA.

IN the *American Journal of the Medical Sciences* for October Dr. Harvey Cushing and Dr. James Bordley have reported the following case which not only marks a new departure in the treatment of uræmia but throws much light on its pathology. A married woman, aged 22 years, was admitted into the Johns Hopkins Hospital on July 24th, 1907, with headache, vomiting, pains in the joints, and swelling of the legs. She had to stand for long hours at work in a factory. She had been married for a year but had never been pregnant. Her illness was said to have begun suddenly five weeks before admission with persistent headache. The apex beat was in the fifth interspace seven centimetres from the mid-sternal line and the cardiac dulness was considerably increased. At the apex a rough blowing murmur followed the first sound and it was transmitted to the base. The aortic sound was ringing and the pulmonic sound was accentuated. The pulse was 80 and the systolic pressure was 175 millimetres of mercury. There was no œdema of the extremities. The urine was pale, of specific gravity 1012, and contained 0·5 gramme of albumin and 12 grammes of urea to the litre, and hyaline and granular casts. The amount of urine in the 24 hours varied from 510 to 1200 cubic centimetres. On the 27th the right knee was painful and the joint contained fluid. On the following day the left shoulder was similarly affected. On the 30th headache was severe and there was mental confusion at times. The systolic pressure registered above 230 millimetres and the aortic sound was extremely loud and ringing. A hot bath caused free perspiration which gave some relief. Ophthalmoscopy showed that the discs were very swollen and that their outlines were entirely lost. There were many small retinal hæmorrhages. The patient remained much in the state described, improving on some days but for the most part suffering from severe headaches, nausea, and vomiting. A capillary pulse was occasionally noticed in the finger-nails. The temperature ranged from 100° to 103° F. A month after admission anasarca was marked; the face was considerably swollen. On Oct. 11th the retinæ were so swollen that the discs could not be located and were covered with hæmorrhages and yellowish-white exudations. The symptoms became aggravated and definite signs of uræmia appeared. Lumbar puncture was performed several times to relieve the pressure symptoms without effect, though the fluid was always under high pressure. The lumbar punctures, nitroglycerine, and other measures had no effect in lowering the blood pressure. On Oct. 24th the patient was semi-comatose. The experience of other renal cases in which temporary improvement in the symptoms and in the condition of the eyes followed lumbar puncture led Dr. Cushing and Dr. Bordley to try to relieve the intracranial pressure by trephining. Under chloroform craniectomy was performed in the right temporal region. Unusual hæmorrhage occurred from all the tissues, particularly from the dura mater. The veins encountered were much congested and the arteries were tortuous and sclerotic. The dura mater was very tense. The subdural space contained no free fluid, but the arachnoid was distended with fluid which escaped on pricking it in a number of places. The brain looked soggy and wet. The incision was closed without a drain and the wound healed by primary union. The general condition of the patient was much improved, the headaches subsided, the vomiting ceased, the stupor disappeared, and the swelling of the discs much diminished. But the urine remained unaltered and the blood pressure almost as high as before. At the site of the craniectomy there was a protrusion for a few weeks which gradually subsided. The patient became so well that she returned home. She was readmitted two weeks later in a semi-comatose state. At the site of the craniectomy was a tense protrusion. There was great œdema which was confined to the face and neck and involved the conjunctivæ. On lumbar puncture a little cerebro-spinal fluid escaped slowly. The needle was left in until an ounce of fluid was withdrawn but no improvement followed. The œdema increased and she became comatose. On Jan. 6th lumbar puncture yielded 1½ ounces of fluid under high tension, and the protrusion of the scalp became softer but the general condition remained unchanged. On the 7th coarse moist râles were heard all over the lungs. Death occurred on the following day. The necropsy showed small granular kidneys, hypertrophy of the heart, chronic aortic and mitral endocarditis, arterio-sclerosis, and acute broncho-pneumonia. The brain was œdematous and its convolutions were flattened. Cerebral tissue projected for five centimetres from the cranial opening. This case supports Traube's view that the cerebral symptoms of uræmia are due to œdema of the brain. It also tends to show that the so-called albuminuric neuroretinitis is, in large part at least, due to local œdema of mechanical origin. This case appears to be the only one in which craniectomy was performed for the relief of uræmia, though the following case led Dr. Byrom Bramwell to suggest the operation when other remedies fail. A woman suffered from headache, vomiting, optic neuritis, and convulsions—symptoms which arose during a recent pregnancy. The urine contained a large amount of albumin and casts. The diagnosis was thought to lie between uræmia and cerebral abscess. The presence of certain unilateral symptoms and of otitis suggested cerebral abscess. Trephining showed only increased intracranial pressure but all the symptoms disappeared in a few days.

TWO PRAISEWORTHY SOCIETIES.

LAST week we brought to our readers' notice the claims of an admirable association for the care of sick children and we are glad to make more widely known the existence of two other societies which are doing no less excellent home work amongst the poor. The first is the National Society of Day Nurseries which we cannot describe better than in these words of Lady Helmsley, the chairman of its council: "The society has been started on a good and true basis; it has studied the various methods of crèche management adopted in other countries, as well as the social conditions necessitating their foundation. It will not bring the millennium, but it will give many infants a fair start in life and will work against the present heavy infant death-rate; it will, we believe, save many illegitimate children from being murdered; in short, it aims at being helpful and beneficial to all concerned in the welfare of children." The main principles upon which the society works are the founding of crèches in the heart of districts where there is a demand for women's labour; provision of suitable and sanitary premises and of medical inspection of the premises, milk, and children; the personal investigation of every applicant's circumstances by voluntary workers: the keeping of a register of the children; and the management of the crèches by competent committees upon business-like lines. Another leading rule is that mother and child shall be brought together as much as possible instead of being separated, so that the nurseries

may act as centres of education in infant hygiene, for, as Lady Helmsley says, although "every woman is supposed to know how to manage a baby by instinct, we know, alas, how untrue is this supposition. The only natural instinct is to suckle the child, all else has to be learnt." The fact that illegitimate children are not refused in these crèches is to be commended. The President of the society is H.R.H. Princess Christian, and the address of the secretary, Mr. W. A. Lawton, is 1, Upper Montague-street, Russell-square, London, W.C. The other charity of which we speak is the Jewish Sick Room Help Society for supplying district nurses to the Jewish poor. Its work is noteworthy in that a provident department has been introduced, and during the present year no less than £517 out of the £1705 expended on the 1543 cases attended by the society's nurses has been collected in pennies from 2450 members in a limited area in the East-End of London, which, the committee truly observes, "is a remarkable evidence of the possibilities of thrift work amongst our people." The secretary of the society is Mrs. Alice Model, of 105, Fellows-road, London, N.W., who was its joint foundress with Miss Löwy.

PURIFORM CEREBRO-SPINAL FLUID IN URÆMIC COMA.

LUMBAR puncture, an operation which has come into use only in recent years, has revealed many facts concerning the condition of the cerebro-spinal fluid in disease. At a meeting of the Société Médicale des Hôpitaux of Paris on July 24th M. Caussade and M. Willette reported a case of uræmic coma in which they were surprised to find the cerebro-spinal fluid puriform. A man, aged 26 years, was admitted into hospital on the evening of May 31st last. On that day he was suddenly seized with convulsions and soon after admission he became comatose. On examination on the following day he was "inerte" and did not answer questions. The pulse was 100 and the temperature was normal. There was no rigidity of the neck and Kernig's and Babinski's signs were absent. The knee-jerks were normal. There was complete incontinence of urine and fæces. The face was a little swollen and there was slight œdema of the eyelids and lower limbs. There was more pronounced œdema of the lumbar region. Auscultation of the heart revealed marked "bruit de galop." A little urine was obtained with the catheter and found loaded with albumin. Uræmic coma was diagnosed and bleeding to 400 grammes was performed, after which the patient recovered from the coma. On the following day he could speak; he remembered no previous illness but had suffered from headache for some time. Improvement continued and at his request he was discharged on July 15th. At this period two litres of urine containing a gramme of albumin per litre were passed in the 24 hours, headache occurred at times, there was slight œdema of the ankles, and the left ventricle was hypertrophied, but the "bruit de galop" had disappeared. At the time the patient was bled lumbar puncture was performed and yielded turbid cerebro-spinal fluid under high pressure. Chemical analysis showed that it contained 0·4 gramme of urea and 8 grammes of chlorides per litre, and traces of sugar and albumin. The fluid contained an abundance of cells which were made up as follows: polynuclears, 90 per cent.; lymphocytes, 8 per cent.; and large mononuclears, 2 per cent. The fluid was sterile and the polynuclears were intact. Five days later lumbar puncture was again performed and the cerebro-spinal fluid was found free from cells. Only one similar case appears to have been reported: M. Chauffard has described[1] "Urémie Aiguë et Polynucléose Rachidienne." It is to be noted that in spite of the condition of the cerebro-spinal fluid the case narrated above cannot be termed an example of meningitis in uræmia, for there were no symptoms whatever of meningitis. Moreover, the effusion of polynuclear cells was a transitory phenomenon. The symptoms of meningitis are due to a superficial alteration of the cerebral cortex. In this case there was no alteration; the phenomena were essentially vascular. The polynuclears were intact and no microbes were present. This condition—an aseptic puriform effusion containing intact polynuclears—was first described by M. Widal.[2] He found it in the cerebro-spinal fluid in syphilis of the central nervous system and in aseptic purulent pleural effusion after pneumonia. He attributed the integrity of the polynuclears to the fact that they were not damaged in the phagocytosis of microbes. M. Chauffard ascribed the puriform cerebro-spinal fluid in his case to the retention of nitrogenous substances which acted as toxins and also to the increased blood pressure paroxysmally increased by the convulsions which produced venous stasis. In the diapedesis of leucocytes the polynuclears were predominant because they are the most mobile elements. M. Caussade and M. Willette suggest that the complex poisons which are retained in the system in uræmia produced congestion of the pia mater and diapedesis from chemotaxis. It is known that certain poisons cause congestion of the pia mater. This condition has been found in poisoning by salicylate of sodium.

[1] Semaine Médicale, 1907, p. 361.

RABIES IN PRUSSIA.

DURING the last few years there seems to have been a considerable increase in the number of persons bitten by rabid animals in Prussia, according to the *Allgemeine Medicinische Central-Zeitung* of Oct. 17th. In the year 1902 the officially reported cases were 250. In each of the four following years between 300 and 380 were reported, and in 1907 no less than 405. In 274 of these cases the animals were proved to have been really suffering from rabies. Most of the persons bitten were taken to the Pasteur stations which have been established at Berlin and Breslau. Of the 266 who were inoculated two died, and of the six who were not inoculated two also died. Three of the four fatal bites were on the face. The mortality of the inoculated cases was thus 0·75 per cent., which is a more favourable result than that obtained in 1906, when four cases out of 236 inoculated proved fatal, a mortality of 1·69 per cent. Of course, most of the wounds were inflicted by dogs but there were 12 cases of cat-bite and one of a hog-bite.

NEW REGULATIONS FOR THE PREVENTION OF GRINDERS' PHTHISIS.

THE Home Secretary has issued a draft of the new regulations which he proposes to enforce for the grinding of metals and racing of grindstones. These have been recommended to Mr. Gladstone by the Cutlers' Company, the Sheffield Chamber of Commerce, and the Sheffield Cutlery Council which represents the workmen. The draft has been printed and circulated in accordance with Section 80 of the Factory and Workshop Act, 1901, in order that any persons interested may suggest their amendment, and that competent inquiry may be held into any reasonable objections which may be thus lodged against the new regulations. These are directed against the heavy mortality from grinders' phthisis, which is a matter of the gravest concern to both men and masters, and which came under full discussion at the Sheffield meeting of the British Medical Association. The processes which it is desired to amend are the manufacture of cutlery, of tools, and of cutting and piercing instruments and appliances of iron or steel; the processes of dry rough glazing in which emery or similar

[2] THE LANCET, May 25th, 1907, p. 1446.

abrading material is used without the admixture of grease; and any other finishing process after grinding in which dust is created to an extent liable to be injurious to health. The new regulations are thus summarised in the Home Office circular:—

Regulation 1 requires, in *dry grinding* of metal (that is, "the dry abrasion of metal, with the aid of mechanical power, by means of a grindstone or of a grinding wheel made of compressed emery or other similar composition") and in *dusty finishing processes*, adequate means for intercepting and removing the dust given off. These means include efficient hoods, ducts, exhaust draught, and arrangements for the disposal of the dust. The exhaust can be produced either by a fan, or by any other equally efficient means that can be devised. Recent experiments indicate that some assistance in this direction can be obtained by utilising the draught from the revolving grindstone or wheel itself. Regulation 2 deals with the racing of grindstones, whether used for wet or dry grinding. The requirement is that this process shall not be carried on without effectual means for preventing the escape of dust into the room, and two modes of compliance are suggested: (1) racing under a cover, with exhaust draught, and (2) wet-racing, that is directing a stream of water upon the point of contact of the racing tool with the grindstone. The former mode is used in Germany, the latter has been successfully tried experimentally at Sheffield. The Regulation, however, admits of any other mode of racing, equally efficient in suppressing dust, that can be devised. Regulation 3 is concerned with the general sanitary condition of the workrooms.

THE ELECTROLYTIC ADMINISTRATION OF DRUGS.

IN the *Pharmaceutical Journal* of Sept. 19th Mr. T. Maltby Clague contributes some useful suggestions regarding the electrolytic administration of drugs recently referred to in THE LANCET under the name "cataphoresis." It depends upon the decomposition of a solution of a salt by an electric current and applying one of the poles to the part of the body where the local action of a particular element is desired. In the case of sodium salicylate, for example, the sodium ions pass to the negative pole and the salicylic ions to the positive. Considerable impetus was given to this line of work by some striking experiments of Professor Leduc of the University of Nantes. Two rabbits were taken and an ear of one was strapped to an ear of the other by a pad of moist lint. To the outer ears were attached pads moistened with a solution of strychnine and joined to a battery of cells. On passing the current the rabbit connected with the positive pole died immediately through receiving an electrolytic charge of strychnine, and on reversing the current the second rabbit died. The experiment was repeated with potassium cyanide, with the result that the rabbit connected with the negative pole died. Drugs administered in this form act with rapidity in relatively small quantities and good results have been obtained by various investigators with quinine, lithium salts, salicylates, iodides, local anæsthetics, and other substances. Dr. Lewis Jones found that warts could be removed electrolytically by using magnesium sulphate without causing pain or leaving a scar. Corns, too, readily yield to sodium salicylate. It is interesting to note that ions may be removed from the body with equal ease. A patient had several black patches on the face produced many years before by an ointment containing arsenic. The patient's hand was placed in a vessel of water with the positive pole from a battery of six cells. A pad of wet lint was then placed over one of the black spots and connected for 15 minutes with the negative pole. It was then noticed that the disfiguring patch had disappeared from the skin while the pad readily showed the presence of arsenic. Mr. Clague suggests that the positive wire in contact with the patient should be one that does not electrolyse under the conditions of the work; platinum is always safe and aluminium is very useful, but poles of iron, copper, or silver are to be avoided. A milliampère-meter in the circuit is a convenience, especially to a new worker. It is of great importance to use simple salts as far as possible. In illustration, if a weak alcoholic solution of strychnine hydrochloride be put into a dialyser standing in a vessel of water and a small current of from 10 to 15 milliampères be passed, strychnine will be detected in the outer vessel within a few minutes and on reversing the current it will as quickly be driven back. But if a stronger current be used paraldehyde will be formed by decomposition of the alcohol. The intensity of the electric current required in cataphoresis is so low that patients rarely experience any difficulty in bearing the process.

UNCERTIFIED CAUSES OF DEATH.

THE neglect of successive Governments to take any legislative action for securing the due certification of causes of death, the necessity for which was so strongly urged in the report of Sir Walter Foster's departmental committee, we must continue to regret. It is, however, satisfactory to be able to note that the proportion of uncertified causes of death in England and Wales is constantly declining, and further that the mean percentage of uncertified deaths in the 76 largest English towns is now under 1 per cent. The Registrar-General's weekly returns show that during the 13 weeks of last quarter the causes of 473 deaths in these 76 towns were not certified, equal to 0·9 per cent. of the total deaths, and corresponding with the mean proportion in the third quarters of the three preceding years. The wide variations, however, in the proportion of uncertified deaths among these 76 towns are very noteworthy and accentuate what has been so often urged in these columns, that, desirable as legislative action in this matter undoubtedly is, due coöperation between local authorities and coroners may, even under present legislative conditions, secure due certification of all causes of death, at any rate in urban populations. During last quarter the cause of every death was duly certified in West Ham, Croydon, Willesden, East Ham, Walthamstow, and Tottenham among the metropolitan urban districts; and also in Brighton, Derby, Southampton, Plymouth, York, Devonport, Ipswich, West Hartlepool, and Great Yarmouth. In the county of London the causes of all but 17 of the 14,984 deaths during the quarter were duly certified, and the proportion of uncertified causes did not exceed 0·2 per cent. in Leeds or in Newcastle-on-Tyne, and was but 0·3 per cent. in Bristol and in Bradford. In striking contrast to these satisfactory low percentages of uncertified causes the following figures call for notice and for the special attention of the several local authorities. In Liverpool 2·1 per cent. of the causes of death last quarter were uncertified, and in Bootle the proportion was equal to 2·9 per cent. In other Lancashire towns the percentage of uncertified causes was equal to 2·8 in St. Helens and to no less than 4·5 both in Preston and in Warrington. In Sheffield the percentage of these uncertified causes was equal to 2·8 and in Birmingham to 3·5; in South Shields and Gateshead to 3·7 and 4·2 per cent. respectively. Why the proportion of uncertified causes of death should be more than 20 times as high in Liverpool as in London and 14 times as high in Sheffield as in Leeds, under identical legislative conditions, seems to call for explanation. Can it be solely due to the exercise of individual discretion on the part of local coroners as to the desirability of holding inquests concerning uncertified deaths? It may be noted that compared with the mean proportions in the three preceding corresponding quarters, the percentage of uncertified causes showed a slight reduction in Liverpool, St. Helens, South Shields, and Gateshead; while, on the other hand, the proportions last quarter showed a more or less decided increase in Sheffield, Birmingham, Bootle, Preston, and Warrington. It is a well-known fact that a very large proportion of uncertified causes of death occur among infants and young children, and in view of much neglect and consequent waste of child-life, especially in urban districts, and of the practically universal adoption of child insurance in our industrial population, it should be

needless to urge the pressing necessity for insisting on the due certification of all causes of death of children. The Children's Bill of the present Government, now under the consideration of Parliament, might be used for securing the due certification of the causes of all deaths, at any rate, of young children.

CHRISTMAS HAMPERS FOR CRIPPLED CHILDREN.

Sir William Treloar has written to ask us to remind our readers of the distribution of Christmas hampers to poor crippled children in the metropolis for the fifteenth year. These welcome gifts are despatched on the morning of the day when, by permission of the Corporation, some 1400 poor children are entertained in the Guildhall. Sir William Treloar hopes that this year he will be obliged to deny no deserving applicant, and that he may have a balance in hand to meet those pitiable cases in which a crutch, a cork leg, or the loan of an invalid chair is more welcome even than the hamper. He reminds us that he is asking the mayors of metropolitan boroughs to coöperate in the distribution of the hampers. Donations may be sent as heretofore to Sir William Treloar, 69, Ludgate-hill, London, E.C., addressed "Little Cripples Christmas Hamper Fund." Sir William Treloar estimates that this fund brightens the lives of over 30,000 of the poor of London at Christmas-time, and we can certainly commend it to the notice of the charitable.

ACETYL ATOXYL.

IN the *Comptes Rendus de l'Académie des Sciences* of June 22nd, M. Salmon has described an acetyl derivative of atoxyl which, it is thought, may prove to possess the remedial value of atoxyl without its toxic properties. He finds that acetyl atoxyl, which is the sodium salt of acetyl-para-amido-phenyl-arsenic acid, is very soluble in water, yielding solutions that are sterilisable at 100° C. without undergoing decomposition. In this respect alone acetyl atoxyl would claim attention, as it has been shown by M. C. Bertrand that atoxyl readily decomposes in solution into aniline and sodium arsenate. This decomposition occurs in a relatively short space of time, even in the cold, and constitutes a serious objection to the use of atoxyl, particularly in the form of injections, which require to be sterilised or Tyndalised before use. M. Salmon has ascertained that the domestic fowl and the rat tolerate about four times more of the acetyl derivative than of atoxyl and that a monkey will support a dose of about 14 grains given in four injections within a period of 12 days. In cases of sleeping sickness in man acetyl atoxyl has been given in doses of from 12 to 15 grains without causing inconvenience, but in the case of a syphilitic patient toxic symptoms were produced by a dose of 7½ grains. From experiments made with rats, guinea-pigs, and monkeys M. Salmon claims to have proved that acetyl atoxyl exerts a specific action upon trypanosoma Gambiense. Professor Koch, in his experiments on sleeping sickness in Africa, observed several cases of complete amaurosis, followed sometimes by blindness, in the course of treatment by atoxyl, and M. Hallopeau has recorded the production of visual troubles in several cases after the administration of atoxyl, due to atrophy of the optic nerve.

A PROBABLE CASE OF MIMICRY IN FISH.

Two species of fish belonging to Cuvier's family of perches, named the lesser weever, otterpike, or stingfish, are not uncommon on our coasts. It is held in great abhorrence by the fishermen all round the coast who invariably kill it with execrations. There are two species, the greater and the less; both are small, the larger one being seldom longer than 10 or 12 inches. They live near the bottom, the larger species forming large shoals, and according to Yarrell are active and subtle. Both have a detached portion of the dorsal fin consisting of six or seven rays which, when trodden upon or handled, can cause a very painful wound which takes a long time to heal. In the just published zoological number of the journal of the Linnæan Society an article is contributed by Dr. A. T. Masterman in which he points out that the intense black colour of the membrane of this portion of the fin must act as a danger signal, especially as it is in marked contrast with the rest of the skin and of the sand in which the animal half buries and conceals itself, ready to dart out on the small crustaceans which form its prey. Now the right pectoral or upper fin of the sole has, especially in the young sole, a large deep black patch the possession of which, he suggests, constitutes a well-marked example of mimicry. The smaller fry of soles, like the weevers, inhabit sandy bays and shallows, and also partially bury themselves in the sand. Dr. Masterman has found that, unlike the turbot and plaice, which when disturbed make active efforts to swim or to escape, the sole lies quiescent even to the point of simulating death, but at the same time erects sharply and spreads its upper pectoral fin, which thus forms a motionless black flag held upwards in a menacing attitude. Further than this, the fin is held up with its plane lying in the central plane of the fish, though the natural position is perpendicular to this plane.

THE ASPHALTED PLAYGROUND.

IN THE LANCET of Feb. 8th, p. 438, reference was made to the dangers inseparable from the playing of rough games by boys on the asphalted playgrounds which are rendered necessary by the small space usually at the disposal of urban and metropolitan schools. The remedy suggested was the introduction of organised physical exercises in the place of "games" as British schoolboys understand them, and it was pointed out that competitions in such exercises between the teams of rival schools would to some extent supply the necessary element of interest in a form of recreation which might otherwise be found too monotonous and disciplinary to command popularity. We were then commenting upon an action brought unsuccessfully against a schoolmaster under whose supervision a game had been played with the result that the plaintiff, a schoolboy, had broken his leg. We recur to a subject which is of some importance owing to the sad death of another boy which has recently taken place as the result of a fall while playing football on an asphalted playground at the Colet-court Preparatory School. At the inquest which followed an assistant master deposed that the deceased, aged 11 years, ran after the ball, kicked at it, and having missed it fell on the back of his head. He further stated that in his opinion football on an asphalted playground was not dangerous and added that at the school in question they had had no accident during the past 14 years. Medical evidence showed that the skull of the deceased was fractured by the fall which he had sustained. We have no desire to see boys "molly coddled," but so very sad an occurrence as the death described calls attention again to the fact that a fall on such a playground can hardly ever be painless, as a fall on a grass playground is in nine cases out of ten, and that it is by no means unlikely to have serious results. Football can be played in a mild manner by small boys without many falls no doubt, but, nevertheless, it is essentially a game demanding whole-hearted vigour and energy, and played "mildly" is scarcely football. The game which caused the accident commented upon earlier in the present year consisted in boys running races, each with another boy on his back, which again could hardly be enjoyed unless it

were done energetically with a corresponding risk of a heavy fall. In the circumstances the broken leg of the one boy and the fractured skull and death of the other were accidents for which neither their schoolmasters nor their schoolfellows could conceivably be blamed, but they emphasise the drawbacks which attend ordinary "games" in asphalted playgrounds and lend support to our suggestion that other forms of exercise might be substituted for them. These would tend equally or even more certainly to promote bodily activity and healthy physical development and so would form a useful preparation for the enjoyment of the more familiar forms of athletic sports at a later age and under more suitable conditions.

AN ARRANGEMENT FOR OBSERVING OPERATIONS.

A FEW years ago when any important operation was performed in a hospital the theatre was crowded with students, but the large increase in the number of major operations has been followed by a great decrease in the attendance of students at operations. This is not entirely a matter for regret, for modern surgery does not take kindly to the congregation in the theatre of a large number of spectators. The auditorium of most modern operating theatres is much smaller than in those which were built 30 or more years ago. In one theatre in Paris a large glass screen was at one time employed to shut off the spectators completely from the surgeon and his assistants. Even in an ordinary operating theatre the spectator sees comparatively little of the operation unless he be one of the favoured few allowed to stand round the operating table. Two methods have recently been described in the *American Journal of Surgery* by which spectators at a distance can see well even many of the minutiæ of an operation. In the September number Dr. C. H. Duncan, surgeon to St. Gregory's Volunteer Hospital, New York City, has described an ingenious arrangement. Over the operating table, at a height where it cannot interfere with the operator or his assistants, hangs a glass shield, at the margin of which are many lights, so that the field of operation is adequately illuminated. In the centre of this shield is a large lens through which pass the light rays from the table and its surroundings; the rays are totally reflected in a prism and then they pass horizontally to a screen which is set in a partition wall, separating the operating theatre from a darkened room where many visitors can obtain a view of almost every step of an operation as it progresses. By means of other lenses the image is rectified and the rays are made to pass through some coloured solutions, so that the red, orange, and green rays are intensified. The image on the screen can be photographed or a kinematograph film can be made from it. The image can be of any desired size. Dr. Duncan suggests that a megaphone can be fixed in the partition and project into the operating-room, and thus the surgeon can talk to the visitors. Operations on such cavities of the body as the nose and rectum do not lend themselves to this method. As the visitors are completely separated from the surgeon and his assistants the danger of contaminating the operating-room by dust from the street is eliminated; the distraction caused by the coming and going of visitors is also done away with; and, moreover, the visitors can have fresh cool air without any risk of chilling the patient. The other method for observing operations is described by Dr. A. Monae Lesser, surgeon to the New York Red Cross Hospital. A mirror five feet by three feet hangs obliquely over the operating table about seven and a half feet above the floor. It forms an angle of about 75 degrees and the spectators can watch the operation from the seats, the first row of which stands about six feet from the operating table. By means of opera glasses the most minute details of the operation can be seen. The enucleation of a cataract or the removal of a gall-bladder can be seen as plainly as an operation on the foot. By this method the spectators are in the operating theatre but they are kept at a distance from the table. Both of these devices are ingenious and doubtless others will be invented. We feel sure that some such procedure will be a definite gain both to the operating surgeon and to the spectators.

APOMORPHINE AS A HYPNOTIC IN ALCOHOLISM.

IN the *Canadian Practitioner* for October Dr. A. M. Rosebrugh, secretary of the Ontario Society for the Reformation of Inebriates, has called attention to the value of apomorphine as a hypnotic in alcoholism. The discovery of the hypnotic properties of apomorphine was made by Dr. C. J. Douglas of Boston in 1899 but has remained almost unknown. It is well recognised how promptly the drug acts as an emetic in a dose of one-tenth of a grain administered hypodermically. Dr. Rosebrugh finds that it acts with almost equal promptitude as a hypnotic in alcoholism in doses of one-twentieth or one-thirtieth of a grain. The patient, however wild or noisy, usually sleeps peacefully in 10 or 12 minutes after the injection. The sleep may last for 10 or 12 hours, after which he awakens refreshed and sober. Dr. Coleman and Dr. Polk of Bellevue Hospital, New York, have used apomorphine in over 300 cases of alcoholism with gratifying results. In Dr. Rosebrugh's experience even the fortieth of a grain is effective in some cases. He thinks that the discovery of this use of apomorphine will mark a new era in the management of cases of acute alcoholism and delirium tremens. In many hospitals patients in these conditions are far from welcome but when it becomes known that a safe and prompt hypnotic is available they will be admitted more readily. At the next session of the Ontario Legislature it is proposed to introduce a Bill drafted by a joint committee of the Ontario Medical Association and the Prisoners' Aid Association. This Bill provides, with a view to economy, for the utilisation of the wards of the general hospitals of the province for the treatment of indigent inebriates of the more hopeful class. Dr. Rosebrugh thinks that the discovery of the hypnotic property of apomorphine and the facility with which it brings alcoholic patients under control will help materially in removing obstacles to the Bill.

THE PRODUCTION OF "BLACK TONGUE" BY HYDROGEN PEROXIDE.

THE pathological condition known as "black tongue" appears to be due to various causes, some of which have not yet been determined. When found in cases of glycosuria it has been ascribed to the action of parasites, particularly saccharomyces linguæ pilosæ. In a recent number of *Les Nouveaux Remèdes* it has been shown by M. L. Bizard that in many cases this phenomenon is caused by the use of hydrogen peroxide as a mouth wash. He cites the case of a smoker who used a mouth wash daily for eight days consisting of a tablespoonful of hydrogen peroxide in half a glassful of warm water. A marked blackening was then found on the dorsal surface of the tongue, but on ceasing to use the mouth wash the colouration disappeared in a few days. The patient was in good health, except that an examination of the tongue showed that the lingual papillæ were hypertrophied. The same effect was produced in the case of two patients undergoing mercurial treatment by the injection of grey oil, who were in the habit of rinsing the mouth with hydrogen peroxide. It was at first thought that the colour was due to the action of the

hydrogen peroxide on the mercurial saliva, but hydrogen peroxide alone, as has been shown, may produce the same effect. As hydrogen peroxide has now come into general use as a mouth wash these observations are of great interest and value. Apart from the blackening of the tongue which may result from too free a use of this preparation the question arises whether the general employment of antiseptic mouth washes and dentifrices is advisable in healthy persons. Where decay is known to exist there is no doubt that a moderate use of antiseptic agents tends to prevent the spread of the invading organisms. But when the mouth is in a healthy condition it would seem preferable to rely upon cleanliness rather than on antiseptics. The bacterial flora of the mouth may contain organisms that naturally tend to preserve it in a healthy condition but the continued use of antiseptics is calculated to destroy favourable as well as harmful bacteria.

THE SALARY OF MEDICAL OFFICERS.

AT a meeting of the Derby education committee held on Oct. 26th the elementary education subcommittee reported that it had resolved to advertise in the medical journals for an assistant medical officer at a salary of £200 per annum. We declined to insert the advertisement in consequence of representations which had been made to us by local medical men and the *British Medical Journal* also refused to insert it because the British Medical Association considered that the holders of whole-time appointments should have a minimum salary of £250 per annum. At a subsequent meeting of the elementary education subcommittee it was proposed that the advertisement should be inserted in the lay press, whilst another proposal was that the town should be divided into sections and the work offered to local medical men. These suggestions, however, were rejected in favour of a resolution to make the salary £250 per annum. We are glad to note this satisfactory result as a consequence of a firm attitude.

THE FREE FEEDING OF SCHOOL CHILDREN IN LIVERPOOL.

A SPECIAL committee appointed by the city council of Liverpool to investigate the subject of the insufficient or improper feeding of school children has issued recently an interim report, with a supplementary preliminary report of Dr. E. W. Hope, medical officer of health of Liverpool. Inquiry has been made into the state of affairs existing at 20 selected schools and the committee asks the approval of the council of the investigation of 12 others before making a final report. Having regard to the voluntary agencies at present providing meals for Liverpool school children, the committee does not feel justified in recommending that the Education (Provision of Meals) Act of 1906 should be put into operation. Dr. Hope in his report gives a summary of the conditions obtaining in the 20 schools visited, and the general trend of observation goes to show that improper, rather than inadequate, feeding accounts for the malnutrition of many children and that parental carelessness or callousness is a more frequent factor than parental poverty in cases where children come breakfastless to school. Dr. Hope is of opinion that education of the poorer classes in proper methods of feeding their children is needed badly. Some suggestions and criticisms are made concerning the "coupon" system, which prove it to be liable to abuse. The fact that some of the teachers voluntarily supply the children's wants is noted, and though this reflects great credit upon their humanity we are of opinion that the system which allows it is wrong, for elementary school teachers are a hard-worked and ill-paid class, and can ill-afford such charity, though they may very well help by superintending the meals. It is gratifying to know that the Liverpool public has responded so well to the appeals of the Children's Meals Committee as to allay anxiety for the immediate future. A pathetic instance is given of a common practice which leads the committee to touch on a very important economic question in connexion with the children of the poor. "A little barefooted child, about five years of age, received her supply of bread and jam and was followed home through the rain to the cellar in which she lived. The medical officer, on entering the cellar, found two other children who attended other schools who had also arrived with their share of bread and jam, and the three of them were proceeding to divide the meal with two others who were not of school age. The mother stated that they did this when their father was out of work. Latterly he had been in hospital but was returning to work the following day. She also stated that she had had thirteen children, seven of whom had died in infancy or early childhood." Commenting upon this case the committee states that it may "feel disposed to dissociate itself from any suggestion that there are less responsibilities in connexion with children below the school age than with those who are attending school." This guarded statement opens out vistas of an important municipal service of hygiene for which there is certainly no existing machinery. We shall await the committee's final report with interest.

THE King has granted to Mr. George Ailardice MacDonald, M.B., C.M. Edin., His Majesty's Royal licence and authority to accept and to wear the Insignia of a Knight of the Order of the Crown of Italy, conferred upon him by His Majesty the King of Italy in recognition of valuable services rendered by him.

A TELEGRAM from the Acting Governor of the Mauritius received at the Colonial Office on Oct. 23rd states that for the week ending Oct. 22nd there were 8 cases of plague and 6 deaths from the disease.

REPORT ON SANITARY MEASURES IN INDIA FOR 1906-07.

THE Report on Sanitary Measures in India for 1906-07 embraces the data relating to the health of the European and native armies, the general population, and the jails, and in addition presents us with the facts appertaining to vaccination, the various medical institutions, the lunatic asylums, and medical schools. It concludes with a review of the sanitary works that have been carried out and with some valuable remarks on the etiology of certain diseases.

As regards the health of the European army, we find that the year 1906 was an unhealthy one for all classes of people in India and the rates of admission to hospital, of mortality, and of invaliding were all higher than in 1905. On an average strength of 70,272 the admissions were in the ratios of 871 per 1000 as contrasted with 834 per 1000 in 1905. As in the latter year so in the year under review, the European troops in the Rawal Pindi and Lahore divisions enjoyed the best health. The chief causes of sickness were ague, venereal diseases, and simple continued fever, the above-mentioned increase of sickness being chiefly due to a rise in the first-mentioned class of diseases, ague causing an admission of 176 as contrasted with 111 per 1000 in 1905. 40 per cent. of the total sickness was due to the above three diseases. The chief causes of mortality were enteric fever and hepatic abscess, 31 per cent. of the total deaths being due to enteric fever and 15 per cent. to hepatic abscess. The number of men sent home for syphilis rose from 75 in 1905 to 120 in 1906. With respect to malarial fevers, these were most rife in the Peshawar and Mhow divisions.

Enteric fever as usual claimed a large number of victims, there being admissions of 1095, or 15·6 per 1000 of strength, with a constantly-sick-rate of 224·1, and a death-rate of 3·19 per 1000. The disease involved a total loss of service of 81,800 days. The age of the victims was again an important factor. Thus amongst soldiers from 20 to 25 years of age the death-rate was 4·64 per 1000, between 25 and 30 years it was 2·08 per 1000, and between 30 and 35 years the death-rate was 1·64 per 1000. Great improvement in the treatment of the disease, we are glad to see, has occurred, as the patients are now kept in hospital longer than formerly, whilst the most important measures as regards prophylaxis are the early diagnosis of cases and isolation of patients until they cease to excrete the bacilli in their dejecta. Both these measures, and especially the latter, should prove useful. Valuable results have been already obtained also from the investigation that is being carried on of the causes and prophylaxis of the disease at the Central Research Institute in India. With respect to venereal diseases, the admission-rate per 1000 was 117, as against 154 in 1905. There has been a real reduction during recent years of these diseases amongst European troops. A great improvement has occurred in the methods and duration of treatment, resulting in the reduction in the invaliding and mortality rates. Abscess of the liver caused a death-rate of 1·52 per 1000, contrasted with 1·18 in 1905. Amongst other diseases cholera was considerably more prevalent, whilst the admission-rate for dysentery rose from 13·4 per 1000 in 1905 to 15·2.

The health of the native army during 1906 was very good, the constantly-sick-rate and the death-rate being the lowest on record, whilst the invaliding rate was considerably lower than in 1905. The chief cause of sickness was, as usual, ague which constituted 38 per cent. of the total admissions. Pneumonia was the chief cause of mortality and constituted 23·7 per cent. The death-rate from this disease amongst the native soldiers was more than four times as great as that amongst Europeans troops.

Turning now to the statistics respecting the general population we see that the year was very unhealthy and the mortality from all the principal diseases except plague considerably higher than in 1905. Cholera was very severe throughout Southern India and all over Northern India the autumn was exceptionally malarious. The number of deaths due to plague was only about one-third of the number recorded in 1905. Although defects in registration were noticed nearly everywhere, and in some places to a very serious extent, yet improvement on the whole is being steadily effected. An experiment in employing a professional agency in a selected area to ascertain the actual causes of the deaths registered was begun on August 1st, 1906, in Bengal. With respect to the mean birth-rate of the population under registration 37·80 per 1000 was registered against 39·13 in 1905. The mean death-rate was 34·73 per 1000 against 35·96 in 1905. Male infants died at the rate of 228·30 per 1000 and female infants at the rate of 217·52 per 1000, as compared with 231·11 and 217·72 in 1905. Of the chief diseases cholera was present in every province except the North-West Frontier Province, and the total mortality rose from 441,786 to 690,519. Small-pox also was more widespread than in 1905. The mortality from fevers was again higher than in 1905, but it must be stated that under "fever" many deaths are registered due to other causes. The mortality from dysentery likewise rose. Plague, however, was much less prevalent than in 1905, the total number of deaths in India as a whole being 356,721 as against 1,069,140 in 1905.

As regards the jails, in spite of the unhealthiness of the year 1906 the health of the prisoners was good, the death-rate being only 1·66 per 1000 higher than the lowest rate ever recorded. The admissions for intermittent fever and dysentery head the list, the death-rate of the former rising from 182 per 1000 in 1905 to 207 in 1906, but the death-rate was the lowest but one on record. There is a lack of accommodation noted as a serious defect in the majority of the jails in Bengal, many also being badly situated in the centre of a town or bazaar, but many improvements have been effected during the year, whilst others are still in progress.

The number of operations for vaccination whilst lower than in the preceding year was considerably higher than the total of any of the preceding three years. The decline in the number of operations as compared with the previous year was shared by every province except Madras, and was greatest in Eastern Bengal, Assam, and Burma. The system of rewards to vaccinators is to be continued and the quality of the work performed shows an improvement. The methods employed were with calf lymph, lanoline lymph, and the arm-to-arm method, the last being the most successful.

The section dealing with the medical institutions shows an enormous amount of medical and surgical work performed; thus with respect to the latter there were 951,603 operations performed. There was again a large increase in the number of attendances and admissions and operations performed. In Bombay we are glad to note that a central nursing system for the whole Presidency has been sanctioned and is in course of formation. This will supervise the training and supply of nurses to Mofussil hospitals. The equipment of hospitals and of dispensaries has been brought to a higher level of efficiency.

With regard to the lunatic asylums we find that there was an increase in the number of admissions and re-admissions in the proportion of 1718 to that of 1401 of the previous five years. There was a marked rise in the daily average sick from 42·18 to 52·26, due to the prevalence of malaria in the Punjab.

Extensive sanitary improvements have taken place in Calcutta, especially as regards the water-supply and the conservancy arrangements, and also in Eastern Bengal, Agra, the United Provinces, and the Punjab and other districts. As regards the medical schools we likewise note improvements in many of them.

(To be continued.)

MEDICINE AND THE LAW.

Children and the Law.

THE amelioration of the lot of children in recent years, through legal interference designed to promote their physical and moral well-being, is constantly illustrated in the police courts. The exposure of children in the streets with a view to their assisting grown-up mendicants in exciting compassion and extracting alms from passers-by is a practice varying in the degree of physical suffering which its entails but always demoralising when the child is old enough to understand. Among several cases recently prosecuted may be noticed one in which a father's practice was to take out his two daughters, nine and 11 years of age respectively, at night on Saturdays and Sundays. At other times he went out playing a cornet with another man, but no doubt found that the crowd in the streets on the evenings named were more likely to commiserate two little girls than to listen to his music. The magistrate told him that he hoped there were few working men who would justify such conduct and sent him to prison for 14 days. Another case heard on the same day may not have shown that the children suffered hardship, but is specially to be commended to the notice of those who consider that it is an act of benevolence to give without inquiry to persons who outwardly, at any rate, are in need. The father and mother charged took their children, of the ages of five and three years, out with them in the streets to beg and the policeman who arrested them described how they observed when passers-by noticed the little ones and pushed them forward to receive any money offered. The man was nominally a carman but had done no work as such for 12 months. When the couple were taken into custody they justified their action by saying that they were starving, but, nevertheless, they had upon them 9*s.* 5½*d.* in bronze money, and at their home, to which after their arrest the police proceeded, was found the wife's mother who lived with them. She was well clothed and was cooking a shoulder of mutton for the mendicants' dinner with two kinds of vegetables to accompany it. The man was sentenced to a month's hard labour and the woman was bound over to come up for judgment when called upon. A by-law of the London County Council made under the Employment of Children Act, 1906, was the subject of a third summons heard upon the same day as the two already mentioned. Under this by-law any boy between the ages of 11 and 16 years while engaged in street trading must wear a badge which the Council provides for the purpose, and the school attendance authorities took out a summons against a boy 12 years of age for neglecting to do so while selling newspapers in the street. The magistrate fined the lad 6*d.*, after

commenting unfavourably on the fact that a mere child had been brought to the court without any steps having been taken to ascertain, and to secure the punishment of, the person, if any, who employed him to sell the newspapers. These three cases reported in a single day from three different police courts, not only prove the care with which the interests of children are now being watched, but the fact of their being published simultaneously in one newspaper (the *Daily Telegraph*) tends to show that measures taken to promote the health and well-being of children are recognised as being of interest to the public.

Stamp Duty on Medicines.

A case of considerable importance relating to the sale of patent foods and medicines came before the magistrate at the Mansion House on Oct. 26th. Mr. W. Migge, of 10, Eastcheap, was summoned by the Board of Inland Revenue for an infringement of the Medicine Stamp Act (52 Geo. III., c. 150, s. 2) in having vended and exposed to sale a box containing preparation and composition to be used and applied as a medicine and medicament, and liable as such to the stamp duty—to wit, "antineurasthin"—without a paper wrapper showing that the duty had been paid. The Inland Revenue authorities stated that the defendant was the agent in this country of a widely advertised German preparation called "antineurasthin" or "Dr. Hartmann's brain and nerve food." The defendant wrote to the Board of Inland Revenue a year ago asking its opinion whether it required to be stamped or not, and after considerable correspondence it informed him that a stamped wrapper would have to be supplied with each box. As the defendant took a contrary view these proceedings were instituted. The preparation "antineurasthin" was sold at 4*s.* 6*d.* per box, and in the Board's view required a stamp duty of 1*s.* per box. On the box, or in papers supplied with the box, it was stated that the preparation had been "prescribed by eminent physicians." The tablets were described as "doses" and to be taken between meals, and the Board submitted that to the man in the street it was a medicine and to be used as a medicine. Counsel for the defence said the simple question was whether this preparation was a medicine and medicament or a food. If this had been a medicine the Board of Inland Revenue, which had analysed it, would have produced evidence to that effect, but it had not done so. As a matter of fact, it was a natural nutrient composed only of organic substances. As such it was exempt from duty. It was not manufactured by any secret process. In Germany it was classified as pure natural food and exempted from duty. The Board had had the official analyses of German experts, in which the preparation was described as food, placed before it, and it had brought forward no counter statement. It was the last thing which the defendant desired that this preparation should be publicly regarded as medicine. It acted only as a nutrient and not as a medicine. Although it contained phosphorus, so did eggs and fish, but these were not medicines or sold with stamped wrappers. As to its being "prescribed by eminent physicians," so was a milk diet or brandy and milk, but that did not constitute them medicines, neither did the use of the word "dose." So far as the evidence went, it was conclusive that this was a food and not a medicine. In a case in 1896, that of Fincher *v.* Duclercq (60 J.P. 276), the respondent was charged by the appellant on two informations, the one for selling a medicine without a paper cover, wrapper, and label, provided by the Commissioners of Inland Revenue, and duly stamped for denoting the duty charged, being properly and sufficiently affixed thereto, contrary to Section 2 of the Medicines Stamp Act, 1812, and the other for selling a medicine without having taken out a licence, contrary to Section 9 of the Medicines Stamp Act, 1802. It was proved in support of these informations that the respondent sold a box containing three tablets of an article called Ludovic's pine tar soap, and that there was not any stamp affixed to the box, and that the respondent held no licence to sell medicines. The box contained advertisements setting out the properties of the pine tar soap in curing eczema, ringworm, coughs and colds, influenza, diphtheria, and other complaints. No evidence was given of the composition of the soap except that it was said to be composed entirely of vegetable ingredients. The justices dismissed both informations on the ground that there was no evidence of any offence being committed against either of the acts in question. It was held by a Divisional Court, composed of Lord Chief Justice Russell and Mr. Justice Wright, that the decision of the justices was right on the ground that it was a question of fact for them whether the article was a medicine or not, and that there was no evidence that it was. In the case the other day it was submitted for the defendant that there was no evidence that "antineurasthin" was a medicine, but that on the analyses and descriptions of the German doctors there was strong evidence that it was food. The magistrate dismissed the case. The stamp duty on medicines is imposed by 44 Geo. III., c. 98, s. 2, and Sched. B.; but the descriptions of medicines chargeable are contained in 52 Geo. III., c. 150, s. 1, and Schedule, while section 3 of 42 Geo. III., c. 56, specifies the persons who are liable to pay such duties. The Acts are badly drawn with the use of much involved and tautologous language. The duty is *ad valorem* and applies to (1) the drugs and preparations of various enumerated kinds specified by name in the schedule to 52 Geo. III., c. 150; and (2) all other preparations of various kinds (which are enumerated) to be used externally or internally as medicines for the prevention, cure, or relief of any disorder incident to the human body, made, prepared, uttered, rendered, vended, or exposed to sale by any person, when the person doing so either (*a*) has or claims to have any occult secret or art for making or preparing the same; (*b*) has or claims to have any exclusive right or title to the making or preparing of the same; (*c*) which have been, are, or shall be prepared, uttered, vended, or exposed for sale under the authority of any letters patent; (*d*) which have been, are, or shall be, by any public notice or by any papers or handbills, or by any label or words written or printed, affixed to, or delivered with, any packet, box, bottle, phial, or other inclosure containing the same, held out or recommended to the public by the makers, vendors, or proprietors thereof, as nostrums or proprietary medicines, or as specifics, or as beneficial to the prevention, cure, or relief of any ailments incident to or in any wise affecting the human body.

THE LONDON MEDICAL EXHIBITION.

(*Concluded from p. 1170.*)

THE manufacturers of foods and dietetic products, as was the case last year, were fully represented. Messrs. Brand and Co., Limited (74-84, South Lambeth-road, Vauxhall, London, S.W.), displayed specimens of their products, including essences of meat in great variety, concentrated beef-tea, and several peptone preparations. Lemco, oxo, bifti, and the Fray Bentos meat products were presented to view at the stall of Messrs. Liebig's Extract of Meat Co., Limited (4, Lloyd's-avenue, London, E.C.). "Bovril," Limited (152-166, Old-street, City-road, London, E.C.), had among its many exhibits some ration foods. The agents for the "Hercules" Patent Meat Juice Press (85, Queen Victoria-street, London, E.C.) showed a press by which it was stated that the whole of the juice, about 50 per cent., can be obtained from raw meat. Horlick's Malted Milk Company (Slough, Bucks) had on view samples of their milk food. The dried milk powder known as Glaxo, which, it is claimed, resembles human milk, was shown by the Glaxo Company (88, Gracechurch-street, London, E.C.). Mrs. Francis Marsh (Overshot Mill, Colne Engaine, Essex) prepares a special kind of sour milk named by the Turks Yaourte which is used in the treatment of diseases of the digestive organs. Specimens of this milk were shown at the exhibition. Diabetic bread was the feature of the display of Messrs. Callard and Co. (74, Regent-street, London, W.). Messrs. Bonthron and Co. (50 and 52, Glass-house-street, London, W.) displayed specimens of their diabetic foods. Plasmon in numerous forms was exhibited by the International Plasmon Co., Limited (London, E.C.), including plasmon granulated milk powder, plasmon chocolate, and plasmon cocoa. The Manhu Food Co., Limited, of 23, Mount Pleasant, London, W.C., exhibited their special foods for diabetic patients. It is not claimed that in these foods the starch is changed into dextrine or glucose but that it is rendered so easily digestible and assimilable as not to have any harmful action or to place a burden on the metabolic processes.

The exhibit of beverages, mineral waters, and wine tonics

was large and representative. Messrs. Gautier Frères (the Charentes, France) showed their ⅌ Cognac brandy. Messrs. Gaymer and Sons, Limited (Attleborough, Norfolk), were represented by samples of their various brands of cyder in bottle. Messrs. Ingram and Royle, Limited (East Paul's Wharf, 26, Upper Thames-street, London, E.C.) had on view samples of nearly all the known natural mineral waters, including Contrexéville "Pavillon," Evian-Cachat, and Giesshübler. Messrs. Findlater and Co. (London Bridge, S.E.) showed among other mineral waters "Carabana," an aperient water with a very large proportion of sodium sulphate in its composition, and Martigny, containing a large quantity of lithium. Two interesting specimens were shown, viz., a thermal mud and table water from the springs of Pöstyén, Hungary, said to be of value in the treatment of gout, rheumatism, and syphilis, by the Bath Establishment, Pöstyén, through the London agent, Mr. H. N. Davidge (42, Shaftesbury-avenue, London, W.).

The display of surgical instruments and hospital and sick room appliances and scientific instruments was not so large as at the medical exhibition held in the Horticultural Hall last year. However, the firms represented had a varied and comprehensive assortment of the latest articles pertaining to the medical man's craft, and those who visited the exhibition had ample opportunity to inspect some useful novelties. An interesting display was that of the Hospitals and General Contracts Co., Limited (33 and 35, Mortimer-street, London), whose exhibits included the Gordon cruet for sterilising safety pins, suggested by Sir Victor Horsley, the Arnold electric vibrator for massage purposes, capable of making 2000 movements per minute, and an improved portable operation table suitable for cottage hospitals, nursing homes, and private practice. Messrs. Mayer and Meltzer (71, Great Portland-street, London, W.) showed general surgical instruments, anæsthetic apparatus, ophthalmic surgery appliances, laryngological instruments, gynæcological instruments, and aural instruments. Messrs. J. R. Collins and Co. (Alliance Steam Mills, Windus-road, Stamford Hill, London, N.) exhibited chemical, physical, and scientific apparatus, apparatus for radiography, and high-frequency apparatus. Messrs. F. Davidson and Co. (29, Great Portland-street, London, W.) exhibited ophthalmic and aural appliances, including a new electric ophthalmoscope suggested by Mr. R. W. Doyne, an adjustable transilluminator suggested by Dr. H. Lewis Jones, portable x ray outfits, and electrolysis appliances and sledge coils. Messrs. Bruce, Green, and Co., Limited (14, 16, and 18, Bloomsbury-street, London, W.C.), showed some useful optical instruments. An instructive exhibit was that of Messrs. C. A. Hoefftcke, Limited (21, Woodstock-street, London, W.). At this stall were to be seen appliances for joint diseases, fractures, lateral curvatures, and for other injuries and deformities. Stansfield Collier's tubes for artificial anus were also on view. Messrs. J. and J. Taunton, Limited (3, Maiden-lane, Queen-street, London, E.C.), showed their non-sagging asylum bedstead. The chief feature of the exhibit of Messrs. Browne and Sayer (Swan Chambers, 104, Upper Thames-street, London, E.C.) was an easy-poise consulting-room couch. This couch is constructed on the principle of bedsteads, couches, and chairs made by the Easy-Poise-Couch Co., Limited (late Equipoise). Mr. Henry Silverlock (92, Blackfriars-road, London, S.E.) showed a large assortment of dispensing labels, visiting lists, charts of every description, diet cards, &c. The Nauheim Institute, Limited (6 and 7, George-street, Hanover-square, London, W.), had a stall at which the mode of treatment followed in that establishment was fully set forth.

Medical publishers were represented by four firms. Messrs. W. B. Saunders Company (9, Henrietta-street, Covent-garden, London, W.) had a full exhibit of the latest medical works by British and American authors. Amongst these were Keen's "Surgery," which when complete will be a work of five large volumes with numerous woodcuts and many coloured plates; Kelly and Noble's "Gynæcology"; Moynihan's "Abdominal Operations"; Bonney's "Pulmonary Tuberculosis"; and "The Pancreas" by Mr. A. W. Mayo Robson and Dr. P. J. Cammidge. Messrs. Baillière, Tindall, and Cox (8, Henrietta-street, Covent-garden, London, W.) had on view a long list of medical works, including French's "Medical Laboratory Methods and Tests"; Freyer's "Surgical Diseases of the Urinary Organs"; Buchanan's "Anatomy"; and Rose and Carless's "Manual of Surgery." The Oxford Medical Publications (20, Warwick-square, London, E.C.) showed, among other new publications, works by Professor W. Osler, Professor G. Sims Woodhead, Professor D. J. Cunningham, Sir Alfred H. Keogh, Mr. D'Arcy Power, and Dr. Stanley B. Atkinson. Messrs. J. B. Lippincott Company (5, Henrietta-street, Covent Garden, London, W.), had on view Piersol's "Human Anatomy"; a new and revised edition of "Appendicitis and Diseases of the Vermiform Appendix," by Dr. Howard A. Kelly; and Pfaundler and Schlossmann's "Diseases of Children," in four volumes.

THE GRAND PRIORY OF THE ORDER OF THE HOSPITAL OF ST. JOHN OF JERUSALEM IN ENGLAND.

WE have been asked by the chief secretary of the St. John Ambulance Association to publish the following memorandum:—

It has been brought to the notice of the executive that many members of the medical profession, especially in the provinces, are under the impression that no acknowledgment, beyond an occasional resolution of thanks expressed in general terms, is made by His Royal Highness the Prince of Wales and the Chapter-General of the Order of the Hospital of St. John of Jerusalem in England of the invaluable services gratuitously rendered by medical men since the institution of the St. John Ambulance Association. These services have earned for the Association its reputation, and have enabled it to carry on its work for the benefit of suffering humanity. In has therefore been thought desirable to publish this memorandum for general information and circulation.

1. Members of the medical profession, male or female, whose names are on the Register published under the direction of the General Council of Medical Education and Registration of the United Kingdom are elected "Honorary Life Members" of the St. John Ambulance Association by the central executive committee at headquarters for acting as honorary lecturers for not less than four courses of instruction in First Aid to the Injured, Home Nursing, Home Hygiene or Sanitation. This distinction is generally published after their names in their biographical notices in the medical directories and similar works.

2. "Honorary Life Members" who have continued to instruct gratuitiously for several years, that is for not less than five or six, have their names submitted through the proper channel for the award of the "Vellum Vote of Thanks" bestowed by His Royal Highness the Prince of Wales, Grand Prior of the Order, and the Chapter-General, this document bearing the signature of His Royal Highness.

3. Those who continue to work as honorary lecturers and by assisting in administration and organisation at centres and branches for a further number of years are recommended by committees of their centre or branch for selection as Honorary Serving Brothers or for enrolment as Honorary Associates of the Order. This recommendation is submitted to the Chapter-General of the Order through the official channel, as pointed out in the regulations, and if approved and sanctioned by His Majesty the King, the Sovereign Head and Patron of the Order, carries with it the award of a decoration which has to be worn at Court, in uniform, and on the various occasions, official and otherwise, when it is customary in Great Britain to wear recognised decorations.

4. Further voluntary service to the Order of St. John or its departments is recognised by promotion in the Order to the grade of Esquire or of Knight of Grace, or even to that of Knight of Justice, subject to the other qualifications ordained by statute.

5. The names of recipients of honours mentioned in paragraphs 3 and 4 are published on the Roll of the Order, which includes almost the whole of the Members of the Royal Family in England and nearly a thousand Members and Honorary Associates, a large proportion of the Members and Associates being members of the medical profession.

(Signed) HERBERT C. PERROTT,
Secretary of the Order of the Hospital of St. John of Jerusalem in England and Chief Secretary of its Ambulance Department.

Chancery of the Order, St. John's Gate, Clerkenwell, London, E.C., 12th October, 1908.

ROYAL DENTAL HOSPITAL OF LONDON.—The annual dinner of the staff and past and present students will be held on Saturday, Nov. 21st, at the Hôtel Métropole (Whitehall Rooms), under the presidency of Mr. W. B. Paterson. Gentlemen, either now or formerly connected with the hospital or medical school, who may through inadvertence not have received special notice and who desire to be present are requested to communicate with the Dean at the Royal Dental Hospital, 32, Leicester-square, London, W.C. The medical committee will be "at home" to all old students of the hospital on the same day from 2.30 to 5 P.M. when the various departments of the hospital and school will be open and specimens and cases of interest, &c., shown by the members of the staff and lecturers.

Public Health.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

County of Glamorgan.—Dr. William Williams points out that although all the annual reports of the district medical officers of health are now printed the reports lack uniformity of size, and he suggests that the demy octavo standard—i.e., 8½ by 5½ inches—should be adopted. This size is a convenient one and perhaps Dr. Williams might set the example by adopting it himself, unless he is of opinion that his own reports in that shape would be too bulky. The population of the administrative county is given as 709,067, so that the county medical officer of health has now under his supervision nearly as many people as are contained in the city of Liverpool. Between 1893 and 1907 the total excess of births over deaths amounted to 165,034, but the actual increase of population was 217,083, so that the increase of immigration over emigration amounted during that period to over 52,000, this number being made up largely of young adults seeking employment at mines and works in consequence of the wages offered and the depressed condition of agriculture. The infantile mortality of the administrative county reached only 136 per 1000 births, as compared with 151 in the previous year—a result largely due no doubt to the favourable climatic conditions of 1907. The rates in the several districts ranged from 173 in the borough of Neath to 57 in the Gower rural district—a detached peninsula running out into the Bristol Channel. Dr. Williams thinks that the work of reducing the infantile mortality should not be left solely to the sanitary authorities. In this we entirely agree. The question of infantile mortality is really more a social than a strictly sanitary one, a fact which was admirably brought out by Dr. E. W. Hope in his last annual report for Liverpool. He there showed how largely the issue of life or death was governed by the personal habits of the parents, and what a great advantage it was as regards expectation of life to have been born of Jewish parents. As Herbert Spencer has observed, in so far as the education of girls for the responsibilities of parentage, a student studying in some other world our books for the young might come to the conclusion that we were a sterile race or that, at any rate, the young of the present generation never expected to have children, seeing that in our books there was no reference made to the responsibilities of motherhood. But we must hope that if this hypothetical student will postpone his researches until our efforts as regards school hygiene are a little more advanced he will conclude that the people of the earth take much thought for the future in this respect. The mortality from scarlet fever during 1907 was 0·07 per 1000; the fatality rate 2·6 per 1000. Dr. Williams reports that although there were 1880 cases of scarlet fever notified only 262 were removed to hospital. Apparently the provision for scarlet fever accommodation in this county is quite insufficient, the isolation hospital consisting largely of two pavilions, one for enteric fever, the other for diphtheria. As he points out, timely and efficient isolation of the first case is of much importance, and he adds that the fact of isolation hospitals having failed in some instances to diminish the prevalence of the disease does not justify the inference that these institutions are of no value. In this we are in agreement with Dr. Williams, and we are pleased to see from his report that "soon there will not be a district in the county without the means of isolating their infected sick." The subject of the water-supply of the increasing population of Glamorganshire has for many years been attacked in a comprehensive fashion by the county medical officer of health who shortly after his appointment compiled a very useful report upon the water-supplies of the county. He has endeavoured to obtain for the county council considerable additional powers in this direction, and by the South Wales Water Act, 1906, powers were conferred upon the council to make inquiries and surveys with a view to the utilisation of water-supplies in South Wales. A scheme has now been prepared for the formation of a water board having the power (*a*) to acquire and to control existing sources of supply; (*b*) to secure further sources and perhaps to undertake the distribution of water; and (*c*) to advise as to the best method of utilising the present and future sources of supply. We are not aware as to how far the area of control coincides with the superficial and underground water-supplies, but it is to be expected that Parliament in granting further powers will probably have regard to the recommendations of the Royal Commission on Sewage Disposal with reference to water boards throughout the country. The county laboratory appears to be doing excellent work, both chemically and bacteriologically, in the matter of water and sewage analysis as well as in other directions.

City of Cardiff.—The danger of relying too closely upon the Registrar-General's methods of estimating the population is well illustrated in the case of Cardiff. At the census of 1891 the population was found to be 128,915, and upon the usual method of estimation the population in 1901 was 200,808, whereas the census of that year showed only a population of 164,363. It is now the custom to make in Cardiff an annual enumeration of the inhabited houses in each district in June and to multiply the number by 5·8, the average population of each house as determined at the last census. But as Dr. Edward Walford observes, this method is open to objection in that the average number of persons per house may vary. A quinquennial census seems the only way out of the difficulty. The infantile mortality for Cardiff for 1907 was 131 per 1000 births as compared with a rate of 118 for England and Wales, 127 for the 76 great towns, 122 for the 142 smaller towns, and 106 for England and Wales less the 248 towns. A circumscribed outbreak of scarlet fever occurred in the spring of 1907 which was traced with a considerable degree of probability to a farm supplying milk to the dealer whose milk was involved. The farmer had recently suffered from a slight sore throat and in the early part of May his niece had suffered from a similar complaint. No rash was noticed and no medical men was called in, but the evidence distinctly pointed to the fact that scarlet fever was indicated. Fortunately the milk dealer at once agreed to take the necessary precautions so that the somewhat circuitous process of the Infectious Disease (Prevention) Act, 1890, had not to be put into operation. The voluntary notification of pulmonary tuberculosis has been practised in Cardiff since 1901, and Dr. Walford speaks favourably as to its value. Although the information obtained has not been complete the cases notified have been those in which the medical practitioner considered the assistance of the health authority advisable.

County of Essex.—Dr. J. C. Thresh considers the majority of the local reports as quite satisfactory and a few as excellent. But some are far from good and contain little information as to the sanitary condition of the districts or of their requirements. This is, we fear, true of certain reports from all parts of the country, and it is difficult to remedy matters so long as the pay accorded to some part-time medical officers of health is so absurdly small. The population of the administrative county of Essex is now over 1,000,000, the main increase in the county during recent years having been the extra-metropolitan areas. As regards birth-rates, Dr. Thresh shows that if these rates are duly corrected the birth-rates in the urban working-class districts are not, as is generally supposed, greater than those of rural districts. The infantile mortality for the county was only 90 per 1000 births and Dr. Thresh states that a greater proportion of infants die during the first month of life in the rural than in the urban districts and that a larger proportion of deaths in these rural districts is due to premature births than is the case in the towns. These facts indicate, he thinks, that in the country the prenatal conditions are less favourable than in the towns, whereas the post-natal conditions are less favourable in the towns than in the country. In the matter of isolation hospitals Dr. Thresh speaks somewhat emphatically, and he states that notwithstanding the larger proportion of cases removed to the hospital scarlet fever was more prevalent in Essex in 1907 than in any year since the disease became notifiable. 55 per cent. of the cases in urban and 53 per cent. in the rural districts were removed to hospital. Dr. Thresh states that until a comprehensive Government inquiry has been held and the cause of what he terms the failure of isolation hospitals has been demonstrated he cannot strongly urge the council further to enforce the provisions of the Isolation Hospitals Act. We rather regret to read this statement on the part of Dr. Thresh, as it seems to imply that because isolation hospitals have not realised the prophecies of some

of their more enthusiastic inaugurators and "stamped out" scarlet fever, therefore they are of no value whatever, an inference which in our view is in no sense warranted from the facts generally available. We are very glad to see that Dr. Thresh lays stress upon the necessity for systematic inspection of the property in all sanitary districts. This is certainly the most important routine work which devolves upon the officers of a sanitary authority, and Dr. Thresh thinks that in many places in Essex such inspections are not sufficiently systematic, while in other instances the local authorities are too lax in enforcing compliance with the notices of the sanitary inspectors. In this direction probably much more will be done in the future by county councils in the nature of surprise visits with a view of ascertaining how far this first essential of detailed sanitary administration is being carried out. Many local authorities take no interest whatever in this subject and fail to examine the officers' books to ascertain how far routine inspection is being undertaken.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7834 births and 4299 deaths were registered during the week ending Oct. 24th. The annual rate of mortality in these towns, which had been equal to 12·8 and 13·9 per 1000 in the two preceding weeks, slightly declined again to 13·8 in the week under notice. During the first four weeks of the current quarter the annual death-rate in these towns averaged 13·5 per 1000, and in London the mean rate in the same period did not exceed 12·4. The lowest annual death-rates in these towns last week were 7·0 in Reading and in Leyton, and 7·3 in Hornsey and in East Ham; the rates in the other towns ranged upwards, however, to 21·5 in Hanley, 21·7 in Preston, 23·1 in Huddersfield, and 24·5 in Tynemouth. In London the death-rate during the week did not exceed 13·2 per 1000. The 4299 deaths from all causes in the 76 towns showed a decline of 13 from the number in the previous week, and included 521 which were referred to the principal epidemic diseases, against 514 and 613 in the two preceding weeks; of these 521 deaths, 335 resulted from diarrhœa, 55 from measles, 52 from diphtheria, 35 from whooping-cough, 23 from scarlet fever, and 21 from "fever" (principally enteric), but not one from small-pox. The deaths referred to these epidemic diseases during the week were equal to an annual rate of 1·7 per 1000, against 1·7 and 2·0 in the two previous weeks; in London the death-rate from these diseases last week did not exceed 1·3. No death from any of these epidemic diseases was registered last week in Cardiff, Plymouth, Northampton, Hornsey, Bournemouth, Hastings, or in Barrow-in-Furness; whereas the annual death-rate therefrom ranged upwards in the other large towns to 5·1 in Warrington, 6·2 in Preston, 6·6 in Huddersfield, and 8·1 in Middlesbrough. The 335 deaths attributed to diarrhœa in the 76 towns showed a decline of 95 from the number in the previous week, and were fewer than in any week since the middle of August; the highest annual death-rates from this cause during last week were 4·1 in Rotherham, 4·2 in Blackburn, 4·4 in Warrington, and 4·9 in Preston. The 55 fatal cases of measles corresponded with the number in the previous week; they caused the highest death-rates, 2·8 in Huddersfield and 4·0 in Middlesbrough. The 52 deaths from diphtheria showed a marked increase upon the numbers returned in recent week; this disease caused death-rates equal to 1·3 in King's Norton, 1·5 in Hanley, and 1·9 in Tynemouth. The 35 fatal cases of whooping-cough showed but a slight increase upon the low numbers in recent weeks. The 23 deaths from scarlet fever showed a further decline from recent weekly numbers. The 21 deaths referred to "fever" also showed a decline, and were below the average. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had steadily increased in the seven preceding weeks from 2855 to 3755, had further increased to 3761 on Saturday, Oct. 24th; the number of new cases of this disease admitted to these hospitals during the week under notice were, however, only 378, against 576, 550, and 502 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 156 and 159 in the two preceding weeks, further rose during the week under notice to 225, but were 11 below the corrected average number in the corresponding week of the five years 1903–07. The causes of 43, or 1·0 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death during last week were again duly certified in Leeds, Bristol, West Ham, Bradford, Hull, and in 52 other smaller towns; the 43 uncertified causes of death included, however, nine in Liverpool, four in South Shields, three in Birmingham, and three out of 13 deaths in Barrow-in-Furness.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 13·6 and 12·4 per 1000 in the two preceding weeks, rose again to 13·3 in the week ending Oct. 24th. During the first four weeks of the current quarter the annual death-rate in these eight towns averaged only 13·2 per 1000, and was 0·3 below the mean rate during the same period in the 76 English towns. Among the eight Scotch towns the death-rate during the week under notice ranged from 7·4 and 10·2 in Perth and Greenock, to 14·4 in Glasgow and 14·8 in Leith. The 467 deaths in the eight towns showed an increase of 31 upon the low number in the previous week, and included 53 which were referred to the principal epidemic diseases, against 55 and 58 in the two preceding weeks; of these 53 deaths, 31 resulted from diarrhœa, eight from diphtheria, eight from whooping-cough, four from scarlet fever, and two from measles, but not one either from "fever" or from small-pox. These 53 deaths were equal to an annual rate of 1·5 per 1000, which was 0·2 below the mean rate from the same diseases in the 76 large English towns. The deaths attributed to diarrhœa in the eight Scotch towns, which had been 28 and 33 in the two preceding weeks, declined again to 31 in the week under notice; 17 occurred in Glasgow, five in Edinburgh, three in Aberdeen, and two each in Dundee, Paisley, and Leith. The fatal cases of diphtheria, which had been 11 and three in the two previous weeks, rose again last week to eight, of which three were returned in Glasgow and two in Edinburgh. The eight fatal cases of whooping-cough showed a decline of nine from the number in the previous week, but included six in Glasgow. The four deaths from scarlet fever somewhat exceeded the low numbers in recent weeks; two occurred in Glasgow. For the first time since the beginning of the year not a single death was referred to "fever" in any of the eight towns last week. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 62 and 58 in the two previous weeks, further declined to 56 in the week under notice, and were 32 below the number returned in these towns in the corresponding week of last year. The causes of 15, or 3·2 per cent., of the deaths registered during the week in the eight towns were not certified; in the 76 English towns during the same week the proportion of uncertified causes of death did not exceed 1·0 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 18·0, 16·4, and 17·4 per 1000 in the three preceding weeks, declined to 16·0 in the week ending Oct. 24th. During the first four weeks of the current quarter the death-rate in the city averaged 17·0 per 1000; the mean rate during the same period did not exceed 13·5 in London and 12·2 in Edinburgh. The 121 deaths of Dublin residents during the week under notice showed a decline of 11 from the number in the previous week, and included 11 which were referred to the principal zymotic diseases, against 19 and 13 in the two preceding weeks. These 11 deaths were equal to an annual rate of 1·5 per 1000; the rate during the same week from these diseases did not exceed 1·3 in London and 1·0 in Edinburgh. Of the 11 deaths from these epidemic diseases in Dublin last week, four resulted from diarrhœa, three from "fever," three from whooping-cough, and one from measles, but not one either from scarlet fever, diphtheria, or small-pox. The four deaths attributed to diarrhœa showed a further decline from the numbers in recent weeks, and were fewer than in any week since

the middle of July. The three fatal cases of "fever" corresponded with the number in the previous week, while the three of whooping-cough exceeded the number in any recent week. The 121 deaths from all causes during the week included 22 of infants under one year of age and 27 of persons aged upwards of 60 years; both these numbers showed a considerable decline from the numbers in recent weeks. Seven inquest cases and five deaths from violence were registered, and 41, or 33·9 per cent., of the deaths occurred in public institutions. The causes of five, or 4·1 per cent., of the deaths registered during the week in Dublin were not certified; in London the causes of all but three of the 1212 deaths were duly certified, while in Edinburgh the proportion of uncertified causes of death was 3·8 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff-Surgeons: G. E. Macleod to the *Calypso;* P. H. Bannister to the *Skirmisher;* and H. H. Pearse to the *Thames.* Surgeons: R. Willan to the *Barham;* A. B. Marsh to the *Speedy*, lent temporarily; and W. J. Stitt to the *Charybdis*, on recommissioning.

ARMY MEDICAL SERVICE.

Lieutenant-Colonel Walter G. A. Bedford, C.M.G., from the Royal Army Medical Corps, to be Colonel (dated Sept. 19th, 1908).

ROYAL ARMY MEDICAL CORPS.

The undermentioned Captains to be Majors (dated Oct. 28th, 1908): Leonard Addams-Williams and Malcolm MacG. Rattray. Captain Dudley S. Skelton is seconded for service under the Colonial Office (dated Oct. 14th, 1908). Captain John F. C. MacKenzie resigns his commission (dated Oct. 28th, 1908).

TERRITORIAL FORCE.

Yeomanry.

Denbighshire (Hussars): The undermentioned officer, from the Denbighshire (Hussars) Imperial Yeomanry, is appointed to the regiment, with rank and precedence as in the Imperial Yeomanry (dated April 1st, 1908): Surgeon-Lieutenant Richard Geoffrey Williams. Royal East Kent (The Duke of Connaught's Own): Surgeon-Lieutenant Campbell Tilbury Fox, from the Royal East Kent (The Duke of Connaught's Own) Imperial Yeomanry, to be Surgeon-Lieutenant, with precedence as in the Imperial Yeomanry (dated April 1st, 1908). Shropshire: Surgeon-Lieutenant-Colonel John Daniel Lloyd, from the Shropshire Imperial Yeomanry, to be Surgeon-Lieutenant-Colonel, with precedence as in the Imperial Yeomanry (dated April 1st, 1908). Sussex: Surgeon-Lieutenant John Robert Steinhaeuser, from the Sussex Imperial Yeomanry, to be Surgeon-Lieutenant, with precedence as in the Imperial Yeomanry (dated April 1st, 1908).

Royal Horse Artillery.

1st City of London (Honourable Artillery Company): The undermentioned officer, from the Honourable Artillery Company of London, is appointed to the battery, with rank and precedence as in the Honourable Artillery Company of London (dated April 1st, 1908): Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel Richard James Reece. 2nd City of London (Honourable Artillery Company): The undermentioned officer, from the Honourable Artillery Company of London, is appointed to the battery, with rank and precedence as in the Honourable Artillery Company of London (dated April 1st, 1908): Surgeon-Captain John Francis Taylor.

Infantry.

5th Battalion, Suffolk Regiment: Surgeon-Captain Sidney Hillier, from the 2nd Volunteer Battalion, The Suffolk Regiment, to be Surgeon-Captain, with precedence as in the Volunteer Force (dated April 1st, 1908). The Hertfordshire Battalion, The Bedfordshire Regiment: Surgeon-Lieutenant Arthur Herbert Foster, from the 1st (Hertfordshire) Volunteer Battalion, The Bedfordshire Regiment, to be Surgeon-Lieutenant, with precedence as in the Volunteer Force (dated April 1st, 1908). 7th Battalion, Cheshire Regiment: The undermentioned officer, from the 5th Battalion, The Cheshire Regiment, is appointed to the battalion, with rank and precedence as in the Volunteer Force (dated April 1st, 1908): Surgeon-Major and Honorary Lieutenant-Colonel John Herbert Hacking. 5th (Cumberland) Battalion, Border Regiment: Surgeon-Lieutenant William Marley-Cass, from the 3rd (Cumberland) Volunteer Battalion, The Border Regiment, to be Surgeon-Lieutenant, with precedence as in the Volunteer Force (dated April 1st, 1908). 4th Battalion, Essex Regiment: Surgeon-Captain James Aitken, from the 1st Volunteer Battalion, The Essex Regiment, to be Surgeon-Captain, with precedence as in the Volunteer Force (dated April 1st, 1908). 9th Battalion, Durham Light Infantry: Surgeon-Captain John Arthur Kendall, from the 5th Volunteer Battalion, The Durham Light Infantry, to be Surgeon-Captain, with precedence as in the Volunteer Force (dated April 1st, 1908).

Royal Army Medical Corps.

Sir Frederick Treves, Bart., G.C.V.O., C.B., late Honorary Colonel, Royal Army Medical Corps (Militia), is appointed to the Honorary Colonelcy of the Royal Army Medical Corps in the Wessex Division (dated Sept. 21st, 1908)

1st Home Counties Field Ambulance: Lieutenant James S. Warrack to be Captain (dated May 19th, 1908). 2nd Scottish General Hospital: Honorary Lieutenant in the Army Auckland Campbell Geddes (formerly Captain, The Queen's Rifle Volunteer Brigade, The Royal Scots (Lothian Regiment)), to be Major (dated June 1st, 1908).

Sanitary Service: Major Arthur Newsholme to be Lieutenant-Colonel (dated August 22nd, 1908). Arthur Cyril Bird to be Lieutenant (dated August 12th, 1908). Surgeon-Lieutenant Charles Kessick Bowes, from the 1st Volunteer Battalion, The Buffs (East Kent Regiment), to be Captain (dated April 1st, 1908). Surgeon-Captain Frederick Burroughs Jefferiss, from the 4th Volunteer Battalion, The Queen's Own (Royal West Kent Regiment), to be Captain, with precedence as in the Volunteer Force (dated April 1st, 1908).

SURGEON-GENERAL J. P. GREANY, I.M.S.

The *Times of India* of Sept. 26th devotes a valedictory article to the retirement of Surgeon-General J. P. Greany of the Indian Medical Service. "When Surgeon-General Greany went on leave early in the year," says our contemporary, "he was in very indifferent health, and it was doubtful if he could return. Consequently his retirement is not unexpected, but it is sincerely to be deplored. The office of Surgeon-General is one of the most difficult in the presidency, and Surgeon-General Greany's task was not made easier by the fact that his immediate predecessors were appointed in the autumn of their lives and could not therefore be expected to push forward a backward department with any great energy. But undaunted by these difficulties Surgeon-General Greany devoted himself heart and soul to his work. He was assisted by the larger funds at the disposal of the Bombay Government, and although he had to fight hard for his larger grants he would be the first to recognise that he received liberal support from Government. In this way he was able to effect a very great improvement in the presidency hospitals and dispensaries, and materially to improve the condition of the Service. We say without hesitation that Surgeon-General Greany was the best head of the Medical Department in Bombay we have experienced for many years, and that his *régime* was marked by an all-round improvement in the standard, whilst at the same time he was everywhere not only respected but greatly liked. Everyone connected with hospital management and with the nursing service feels that in the retirement of the Surgeon-General he has lost a personal friend and a splendid controller of his work. We can only regard his severance from his work in India as a severe loss to the Government and as a source of deep personal regret." We have reproduced our contemporary's remarks almost *in extenso*. Surgeon-General Greany must feel highly gratified at such a testimonial, emanating, as it does, from a fully-informed source.

THE TERRITORIAL FORCE: WATER SECTION DUTIES.

Lectures are to be given to the men of the Territorial Force in water section duties. The lectures embrace a simple account of the nature and properties of water, followed by an explanation of the necessity of a sufficient water-supply and the evils which result from a deficiency. A simple recital

is to be given of the diseases attributable to impure water, followed by an account of "germs" and the part they play in the causation of disease. Filters are to be dealt with, also sterilisation and the utilisation of chemicals for the routine purification of water. Arrangements are being made in the Southern Command by officers of the Royal Army Medical Corps to lecture at the more important centres of the Territorial Force.

THE SLEEPING SICKNESS COMMISSION.

Captain F. Percival Mackie, I.M.S., has been selected by the Government of India to join the Sleeping Sickness Commission which has recently left England for Uganda under the auspices of the Royal Society and under the direction of Colonel Sir David Bruce, R.A.M.C. Captain Mackie hands over his duties as assistant to the Director, Bombay Bacteriological Laboratory, and joins Sir David Bruce and his party at Mombasa.

ROYAL ARMY MEDICAL CORPS EXAMINATION.

An examination of candidates for not fewer than 30 commissions in the Royal Army Medical Corps will be held on Jan. 27th and following days. Application should be made to the Secretary, War Office, London, S.W., not later than Jan. 18th next, on which date the list will be closed. The presence of candidates will be required in London from Jan. 25th.

Correspondence.

"Audi alteram partem."

THE CONTAMINATION OF MILK.

To the Editor of THE LANCET.

SIR,—The question of the contamination of milk is one of immense public importance and is now beginning to receive the amount of attention which it deserves. As evidence of this I need only refer to the recent exhaustive report on the subject issued on behalf of the East and West Ridings of Yorkshire, to another important report by the medical officer of health of Chester to which you have devoted a leading article in THE LANCET of Oct. 24th, p. 1226, and also to a notice in the *Times* of Oct. 26th in reference to the action of the public health committee of the London County Council.

In the very elaborate work on "The Bacteriology of Milk" by Swithinbank and Newman (1903) they say "that there are two rises and two falls in the number of bacteria [in milk], the first being due to extraneous organisms, and the second to lactic acid organisms, "and they believe this" to be the almost universal rule in untreated 'natural' milk" (p. 135). At the first decline "the common extraneous bacteria die out, and that for the very simple reason that they cannot live in the presence of the new tide of acid-forming bacteria." This is said to occur after about 12 hours at temperatures between 60° and 98° F., whilst the second decline begins after six days at 60° and after 72 hours at 98°. As the decline progresses moulds (*Oidium lactis*, &c.) increase, so that ultimately these latter completely replace the bacteria. A similar statement is made by these authorities in reference to the "ripening of cream," concerning which they say (pp. 187–189), "In three or four days the number of organisms [bacteria] found in cream has abated, and eventually nothing remains but *Oidium lactis*, as in milk."

Seeing that these are the natural changes that occur in milk and cream one would expect to find very distinct references in reports on "the contamination of milk" to the presence and abundance therein of spores and conidia of moulds, these being bodies enormously larger than bacteria. Hitherto, however, I have been unable to find any specific statements on this subject, either in the Yorkshire report or even in the important work from which I have quoted, in which the inevitable appearance of moulds is so explicitly stated. This is to me all the more surprising because of certain observations of my own many times repeated during the last eight years. The first and simplest observations were of this nature. Fresh milk from one of the very best London companies was poured into a small one ounce sterilised beaker over which another was inverted. If left at a temperature of about 70° F. a thick layer of cream soon rises to the surface, and when minute portions of this are examined by the microscope after about 33 hours though myriads of bacteria are to be seen no spores of mould can be detected; but in from 40 to 45 hours I have invariably found conidia of mould together with more or less mycelium infiltrating the layer of cream.

After studying the work of Swithinbank and Newman a few months since and reading the Yorkshire report I have repeated these observations, and carried them much further with the purest milk that I could obtain both from London and the country. The new observations have been of this nature. A shallow Petri dish containing some layers of blotting paper on which a microscope slip was placed was thoroughly sterilised (so that the blotting paper became scorched); and as soon as this had cooled a little some recently boiled distilled water was poured over the blotting paper, and a single drop of fresh milk was placed by means of a sterilised pipette on the centre of the microscope slip. The cover of the Petri dish, which had been thus briefly removed, was then replaced, arrangements having been made that in this damp chamber the cover should come into contact with the drop of milk, which was thus fixed between it and the microscope slip. This arrangement was made because it had been found that conidia of mould always tended to subside to the level of the slip. Therefore, when the cover of the Petri dish was removed for examination of the drop after some days the less important portion of the milk was carried away with it. The application of the cover glass to the slip could then be made and the result of the experiment studied.

What I have invariably found has been this: that in four or five days with a temperature of 70° to 65° F. thousands of torula-like bodies or conidia were to be found among the milk globules and swarms of bacteria. It seems perfectly clear that the milk has to be rendered acid by the swarms of lactic bacteria before the moulds can make their appearance. But we may well ask, Whence come they? Can we believe that the air is so full of the spores or conidia of *Oidium lactis* or other common moulds that in *every single drop* of the purest and most carefully preserved milks supplied to the public these moulds can be made to make their appearance?

My observations are thoroughly in accord with the statements of Swithinbank and Newman as to the natural changes occurring in milk and cream. Yet the bacteriologists tell us nothing about the prevalence of the conidia of moulds in milk, and although they are so much larger than bacteria they seem almost to elude their observation. I searched carefully for information on this subject in the Yorkshire report and the only definite statement I could find is that made on p. 56, in which Dr. Thomas Orr says in reference to the examination of sediments obtained by the centrifuge from various specimens of milk: "Bacteria were always present *and sometimes yeast cells.*" Surely bacteriologists ought to tell us something more about the invariable appearance of moulds in milk.

I am, Sir, yours faithfully,

H. CHARLTON BASTIAN.

The Athenæum, Pall Mall, S.W., Oct. 26th, 1908.

ON CHRONIC MORPHINISM AND ITS TREATMENT.

To the Editor of THE LANCET.

SIR,—In THE LANCET of August 15th, p. 439, there appeared what may be termed a "*causerie*" on the Opium Habit by Sir Dyce Duckworth, characterised, as Professor A. Gamgee in his subsequent paper in THE LANCET of Sept. 12th, p. 794, remarks, by much grace of style, but which, taken as an exposition of the question by a medical teacher, shows conclusively how little the subject is understood in England.

"Sir Dyce Duckworth," says Professor Gamgee, "attempts no analysis of the essential causes, leaves absolutely untouched the nature and the clinical characters of the multiple cravings ..... which are rendered evident by the circulatory, respiratory, digestive, metabolic, and nervous phenomena. ..... He ignores the methods by which these distressing symptoms may be combated ..... and he throws the whole weight of his authority" in favour of what Professor Gamgee calls the "extremely vicious" English system, a system which to recommend at the present day, when the morphia habit can be cured without the infliction of suffering, is, as Mr. J. Q. Donald remarks, "almost criminal," and shows either the most unpardonable ignorance or the most surprising inhumanity.

In his subsequent paper Professor Gamgee has corrected Sir Dyce Duckworth's omissions and errors and has given a most excellent *résumé* of what is known to those who have given special attention to the subject. And I can myself endorse all the more fully nearly every word that he says, in that there is scarcely a line in which he has not been anticipated by myself and which is not simply a repetition of what I have myself written. As far back as 1888 in the *Encephale*, in my "Cure of the Morphia Habit" of 1890 and 1901, in the "Medical Annual of 1894," and in your own columns in 1901, I have repeatedly insisted on the same points as Professor Gamgee—the multiple nature of the craving, the three great indications of treatment, and the three great means of relief, identically the same as those now proposed by Professor Gamgee and which I have even called my "therapeutic triad."

I will ask your permission to contrast as briefly as possible Professor Gamgee's propositions with those to be found in the different contributions of mine just mentioned. Rightly recognising that the understanding of the morphia habit depends upon a proper comprehension of the nature of the craving, Professor Gamgee insists upon the *multiple causes* of this condition—its nervous, circulatory, respiratory, digestive, and metabolic elements. I pointed out as far back as 1887 that the craving was not to be looked upon as a pathological entity but that it could be split up into numerous "factors" which are the different physiological perturbations caused by the want of the accustomed stimulant. It is true that I have never seen primary respiratory trouble. This is nearly always of cardiac causation and therefore classable under circulatory causes, and with the latter I have insisted upon all the other "causes of craving" mentioned by Professor Gamgee—the digestive, the nervous, and the metabolic—and these constitute my "factors of craving." It is the recognition of the true nature of these "multiple causes," or "factors of craving," that enables us to decide what are the indications of treatment. Professor Gamgee finds that from these "multiple causes" three principal "groups of symptoms" may be distinguished and that these require for their relief three kinds of therapeutic intervention. Professor Gamgee's "groups of symptoms" are (1) the nervous symptoms; (2) the circulatory and respiratory symptoms; and (3) the gastro-intestinal symptoms, for which he respectively advises (*a*) very hot baths, (*b*) heart tonics (i.e., digitalis and strychnine), and (*c*) Vichy water. These three "*groups of symptoms*" are identical with my three great "*indications of treatment*": (1) nervous irritability, (2) cardiac disturbance and failure, and (3) stomach difficulty, the only difference being that I have never seen "gastritis," for which Professor Gamgee recommends the Vichy water, but simply functional trouble, perversion of secretion, chiefly hyperacidity, which fact has been confirmed by Hitzig and Erlenmeyer. If Professor Gamgee has not written the word "gastritis" hastily and really means that this condition occurs in his patients I can only attribute it to his very mistaken practice of substituting morphia by the mouth for the hypodermic injections and of keeping his patients in bed. I would point out that Mr. Donald appears to be of the same opinion. He tells us that he has not found symptoms of gastro-intestinal catarrh to be common and has had no difficulty in treating such symptoms *except when the patient has been in the habit of taking the morphia by the mouth*. Professor Gamgee's three "lines of treatment" are, again, identical with what I have called "my therapeutic triad," which consists of (1) the Turkish bath, or when this is not obtainable the hot-air bath, followed by hot and tepid douches; (2) heart tonics (digitalis and sparteine); and (3) bicarbonate of soda, especially in the form of Vichy water.

In two details only there is a slight difference between Professor Gamgee's three lines of treatment and my therapeutic triad. The first concerns the nature of the hot baths, Professor Gamgee recommending an ordinary very hot bath, whereas I much prefer the Turkish bath or hot douches. There is not the slightest doubt about the relief experienced by the morphia *habitué* in an ordinary very hot bath (at a temperature of from 39° to 40° C.), *whilst it lasts*, but prolonged baths of this kind are depressing, especially to the heart, and often cause increased craving afterwards. Within the last few days I have had an example of this, a bath at 40° C. taken at 10 P.M. instead of the douche, which was out of order, leaving the patient in a state of restlessness and agitation, particularly felt in the feet and hands, which were swollen and puffy, clearly showing the general atonic condition. This was further shown by the presence in the urine voided in the night of ten centigrammes per litre of albumin. An extra dose of morphine would have set things right, but the patient had fortitude enough to do without it, and after a sleepless and miserable night things righted themselves in the morning. The Turkish or hot-air bath is, on the contrary, both sedative and *tonic*, and irritability being the expression of weakness it is evident that a toni-sedative application must be more efficacious than a purely sedative one. When a properly appointed Turkish bath is not available an ordinary hot-air bath, ending with a tepid douche as cool as can be borne, which enhances the tonic effect, is a good substitute, but best of all are repeated hot douches at from 43° to 45° C. of short duration, and these should be *brisées* for the body but directed on the feet with full strength. The percussion thus produced leaves the whole organism stinging with *bien-être* and straightened out to a degree that is almost incredible. I have seen patients crawl to the douche at the hour when their dose of morphia was due, tired out and full of pain, with the craving which would soon become unbearable coming on, and often so prostrate that it was necessary to help them to undress. A few minutes later, strengthened and soothed, they have been able to dress briskly and have walked away full of energy, all desire for morphia temporarily suppressed, the allowed dose being deferred for some hours. This I can affirm not only from many hundreds of observations but also from personal experience in my own weaning. Another detail in which Professor Gamgee differs from me is the recommendation of washing out the stomach with Vichy water instead of simply giving it as a drink. Professor Gamgee says that it is because his patients suffer from *gastritis*, which is due no doubt to the substitution of morphia *per os* for hypodermic injections. My own plan is to give the Vichy water as a drink, because there is not only hyperacidity of the stomach but also an acid condition of the system generally, which washing out the stomach would not reach.

Where, however, I differ *in toto* with Professor Gamgee is concerning the conditions under which the treatment should be applied. Professor Gamgee, following many other writers, recommends the patient to be kept in bed and morphia to be given by the mouth instead of by hypodermic injection. I never give the morphia by the mouth and I have never met with the slightest symptom of gastritis. Keeping morphine *habitués* in bed only aggravates the monotony of the suppression, whereas the great object is to amuse and distract the patient and make time pass as rapidly as possible. I used to give rectal injections as soon as the patient had decreased hypodermically as far as is possible without discomfort, but since the introduction of dionine and hyoscine I usually give these *at this time*. If dionine is given as a substitute at once, as in the German plan of decreasing the morphia progressively and increasing the dionine in inverse ratio, by the time the morphine is suppressed there will be a certain addiction for dionine and difficulty may be experienced in giving it up. My plan concerning the administration of dionine is founded upon the fact that when morphia is suppressed suddenly there is the most unbearable suffering for five or six days and then recovery. Hence I give dionine when I have reduced the morphia as far as possible for the same length of time that the patient would otherwise have suffered—i.e., for five or six days *in full doses*. It must then be stopped in four more days. Hyoscine has been chiefly used in America as a "knock-out" cure, much vaunted by some, but strongly condemned by Crothers, with whom I agree to a great extent. I have, however, found it extremely useful in moderate doses towards the end of the cure, but there is no succedaneum that is suitable for all cases.

My present plan is the application of my three factors of treatment with progressive decrease of the strength of the hypodermic injections to a vanishing point, the constantly reducing dose being given always in the same quantity of salt water in a 0·7 per cent. solution. If plain water is used the injections, when the solution gets below a strength of 1 in 50, become gradually more and more painful, which in itself is not a disadvantage as it renders them less desirable. But as watery solutions of morphia become still weaker they cause inflammatory induration which may lead to abscesses,

whereas with morphia in salt solution there is neither pain nor inflammation. Rectal injections are given only at the last moment. Some patients prefer to be kept ignorant of their rate of progress, and I accede to their wishes, but I never use constraint or compulsion. The ideal way is for the patient to decrease every day by his own initiative, the *ensemble* of the treatment preventing any discomfort that might stand in the way. This constitutes a real re-education of the will which is the best guarantee against future relapse.

I may conclude by saying that with this treatment, so persistently advocated by me, unheeded by the profession but now shown to be absolutely scientific, and as it has been called "physiological," by Professor Gamgee, supplemented by the means I have alluded to, the morphia habit is absolutely curable. The profession should know that on the lines laid down in the contributions to THE LANCET by Professor Gamgee and myself, the morphia habit is, *in those who really intend to give it up*, a very easy and simple thing to cure. It is therefore the bounden duty of medical men who undertake the treatment of morphia patients to learn how to treat such cases, inasmuch as it is through medical ignorance and carelessness that the habit is first formed, and by medical incompetence in treatment that the patient is led to believe his case is hopeless and that that chronic discouragement is brought about which is the chief element of difficulty.

I am, Sir, yours faithfully,

Montreux, Oct. 1st, 1908. OSCAR JENNINGS.

DIVISION OF THE AUDITORY NERVE FOR PAINFUL TINNITUS.

To the Editor of THE LANCET.

SIR,—In reference to Mr. C. A. Ballance's case of division of the auditory nerve for painful tinnitus published in THE LANCET of Oct. 10th it would be interesting if he would provide your readers with a detailed account of the operation. Personally I should also like to hear from Mr. Ballance why he did not open and destroy the cochlea in preference to submitting the patient to the more serious cranial operation. The result in the case published by me in your issue of Sept. 19th has been so excellent (the patient having had no return of the tinnitus since his operation) that I should hesitate to proceed to division of the nerve before destruction of the cochlea had been tried. I note that Mr. Ballance's patient was free from tinnitus on May 24th, four months after the operation.

I am, Sir, yours faithfully,

Harley-street, W., Oct. 22nd, 1908. MACLEOD YEARSLEY.

To the Editor of THE LANCET.

SIR,—I was much interested in reading in your issue of Oct. 10th an account of an operation under the above heading by Mr. Charles A. Ballance. In his remarks Mr. Ballance says: "Attempts to divide the auditory nerve have been previously made, but I am not aware that the operation I have just described was employed in any of them."

May I point out that I had previously successfully performed the operation exactly in the way described by Mr. Ballance? We differ only in the means used to displace the cerebellum. The patient was a man, aged 42 years, under the care of Dr. A. P. Beddard, upon whose suggestion I undertook the operation. The operation was done in two stages on March 13th and 24th, 1904, and was completely successful. Mr. Richard Lake mentions my case in his instructive paper "L'État Actuel de nos Connaissances au Point de Vue des Interventions Opératoires dans le Vertige et les Bourdonnements d'Oreilles" (*Archives Internationales de Laryngologie*, 1904), and it is also referred to in that excellent work by Mr. P. Macleod Yearsley, "A Text-book of Diseases of the Ear."—I am, Sir, yours faithfully,

Harley-street, W., Oct. 26th, 1908. DONALD ARMOUR.

NOTES ON A CASE OF ACUTE GOITRE.

To the Editor of THE LANCET.

SIR,—In reference to the case reported by Dr. S. J. O. Dickins in THE LANCET of Oct. 24th, these fatal cases of goitre by sudden increased pressure on the trachea are more common in Cumberland than they seem to be in Sussex, and we are constantly alive to the possibility of such occurring anywhere in this district. Intubation of the trachea or section of the isthmus is equally futile, and the only plan likely to succeed is liberation of the windpipe from pressure by immediate removal of half of the enlarged thyroid gland. I have tried tracheotomy years ago, also division of the isthmus, and am confident that the removal of the pressure is the only course to adopt. The soft trachea is so squeezed, compressed, and altered in shape that a very slight increase of pressure upon it will induce suffocation. When the trachea is hard, as it becomes with age, there is no fear of compression or suffocation.

Of course, any ordinary goitre will waste under the use of large doses of iodide of potassium, but it is not always safe to wait for this gradual method of absorption. In the *International Clinics* for 1896, Vol. IV., fifth series, p. 242, I contributed a paper upon the Operative Treatment of Goitre, and included in the remarks are some cases similar in their symptoms to the case Dr. Dickins has described.

I am, Sir, yours faithfully,

Carlisle, Oct. 26th, 1908. H. A. LEDIARD.

THE RELATION OF THE PHARMACIST TO THE PHYSICIAN.

To the Editor of THE LANCET.

SIR,—I was much interested by reading your annotation under the above title in your issue of August 22nd, p. 576. It deals with the same subject and almost from the same point of view as I did in one or two letters (on Copyright of Prescriptions) that I wrote to you ten years ago. According to Dr. C. S. N. Hallberg, whose article in the July *Bulletin of the American Pharmaceutical Association* you quote, a prescription is designed only for a particular person, for a particular purpose, at a particular time; it is the utterance of the prescriber, who alone should direct and control its employment. This is the opinion I have always maintained, and I believe it to be quite reasonable and right. It is a physician's duty, in giving a prescription, to direct for how long it is to be employed; if he does not do so he might be held to be guilty of negligence. It is a dangerous abuse for the prescription to be used by other people or even by the same patient at another time without skilled advice. There are very few prescriptions at all that could be left with entire safety to the discretion of the patient.

For the last 12 months or so I have adopted a method which seems to overcome the difficulty, and perhaps some of your readers might be glad to adopt it also. It is the custom in this country for medical men to write their prescriptions on slips of paper, on which are printed their names, addresses, and hours of consultation. On each such slip I have had printed also, near the top, in red ink, the words, "Not to be repeated after ..... days." The date is written immediately above. The scheme was approved by the Medical Defence Association of this State, and I understand that some other medical men have now resorted to it and have found it work well. I have had no trouble with patients. Most of those to whom I have explained it appreciate it as extra care and attention. Nor have any druggists, so far as I know, infringed the prohibition.

I am, Sir, yours faithfully,

F. LUCAS BENHAM, M.D., M.R.C.P. Lond.

Exeter, South Australia, Sept. 23rd, 1908.

THE CAUSE AND PREVENTION OF DENTAL CARIES.

To the Editor of THE LANCET.

SIR,—If Dr. O. Clayton Jones had read the original communication referred to by Dr. Harry Campbell I doubt if he would have said that "every theory of dieting has been tried on the children of this generation without effect." For in that communication I wrote: "Now that we know the rôle of the foodstuffs in the etiology of caries it is possible for us to show how the disease may be prevented, and although it has been said that people would not adopt the method we advocate it is a fact that already many people have adopted it and when it has been commenced at a sufficiently early age the results have so far been absolutely perfect." The latter part of the above sentence refers to ten children who were brought up according to the method advocated, and every one of these children has perfect teeth. This may not appear to

be a large number, but ten children after the age of two and a half years have 200 teeth and at about six years of age children have on the average six carious teeth each. In other words, among a similar number of children brought up in the ordinary way we should expect to find 60 carious teeth. These are not all the facts upon which our theory is based by any means. I refer to these because the parents of these children took the trouble to read one or more of my books on the subject and they admittedly brought up their children according to the principles therein advocated. But the methods advocated were themselves based on similar facts, for for years before advocating any method at all I questioned all patients or their parents with regard to their diet: (1) when the teeth were particularly free from caries, and (2) when the teeth were ravaged by the disease. The type of diet which I found invariably associated with the perfect teeth later became the type of diet which I advocated in my books and epitomised in THE LANCET in the article referred to. Since then I have continued this process of questioning when the teeth were particularly free from caries or the opposite, and in *all* cases the result has been to show that the different extremes with regard to caries were always associated with a corresponding difference in dietetic habits. I further found from what was known of savage tribes with excellent teeth that they, too, conformed to the type of diet advocated. Moreover, Dr. Harry Campbell has brought forward many facts in his articles on the "Evolution of Man's Diet" which still further seem to show that the cause of the prevalence of dental caries is associated with, and results from, a change in diet and dietetic habits. When, therefore, Dr. Clayton Jones says he fails "to see the use of laying down laws unless facts can be produced," he evidently does not seem to be aware of the facts which can be and have been produced. Further, I doubt if Dr. Clayton Jones is acquainted with the three well-known dietetic theories. He speaks of "the diet theory" and says that there are many arguments against it. Thus, for example, he contends that "teeth often decay as soon as cut and before the child has had much opportunity of doing them good or harm." This sentence would indicate that he was not even acquainted with the dietetic theory to which Dr. Campbell referred, for this theory indicates why teeth are frequently specially liable to decay as soon as they cut the gum; and, moreover, it denies that food does good or harm to an erupting or erupted tooth except by inducing caries.

I am, Sir, yours faithfully,

Wimpole-street, W., Oct. 25th, 1908. J. SIM WALLACE.

FLOATING SANATORIUMS.

To the Editor of THE LANCET.

SIR,—Your Vienna correspondent in his description of the recent Congress of Thalasso-therapeutics referred to the proposal to establish a service of floating sanatoriums for marine treatment of disease. It may interest the medical profession, therefore, to learn that a company is now being formed for the purpose of establishing such "Floating Salutaria" on the Adriatic Sea, which, with the Gulf of Venice, offers the best cruising ground in Europe for invalids and convalescents. It is easily navigable by steamers, is usually calm, the water is very pure and contains 1 per cent. more salt than the Atlantic. The mean temperature of the air is 50° in winter and 70° in summer. There is bright sunshine nearly all the year round. The steamers will have a base off Fiume, which lies in a very sheltered position (Ragusa may possibly be the autumn and winter base). In order to make the cruises as enjoyable as possible no particular route will be chosen. This will be left to the discretion of the captain who will select such parts of the sea as are considered most suitable and with regard to the most favourable climatic conditions. In threatening weather, the approach of which will be duly announced by wireless telegraphy, there are many charming bays, islands, and harbours where the vessel can take shelter.

It is intended to build, in the first instance, a vessel of 5000 tons displacement specially constructed to provide every modern comfort and supplied with every requisite to be found in the best equipped sanatorium on shore. Every means will be taken to protect the patients from the smoke, smell, and heat of the engines and the many other inconveniences experienced on ordinary steamers, however well equipped. The vessel is intended chiefly for the benefit of invalids, but healthy persons will be admitted to the cruises. Cases of mental weakness or melancholia, tuberculosis in any shape or form, or any other infectious or contagious disease will not be taken on board. In order to insure this rule being carried out intending guests will be required to bring a certificate from their own physician to the consulting physician of the company in London or Vienna, who will carefully supervise and countersign it. Failing this the latter will satisfy himself as to the suitability or otherwise of the case. The dimensions of the vessel will be: 350 feet long, 48 feet broad, 25 feet deep. Displacement, 5000 tons. Classed 100 A1 at Lloyds. Double bottom. Single screw machinery amidships. Horse-power, 2500. The speed will not exceed 13 knots, thus economising coal space, which can otherwise be turned to account. Throbbing and vibration will be reduced to a minimum. One funnel. Welsh smokeless coal will be used. A swimming bath 44 feet by 20 feet will be fitted, which, when emptied, can be used as a concert or ball room. There will also be a gymnasium.

Each vessel will have a medical superintendent and two assistant medical officers, and a full staff of experienced male and female nurses and attendants. Any form of treatment indicated or any special treatment suggested or ordered by a patient's own physician will be carried out. There will be a dispensary with complete medical and surgical equipment, and two hospital wards (one for men and one for women) fitted with special swing beds or cots.

I am, Sir, yours faithfully,

EDWARD GRAY, M.B., C.M. Aberd.

Regent's Park-road, N.W., Oct. 14th, 1908.

DEGREES FOR LONDON MEDICAL STUDENTS.

To the Editor of THE LANCET.

SIR,—When dealing with the above-named subject there is an unfortunate disposition on the part of some to make it an occasion for discussing the relative worth of certain degrees and diplomas. The introduction of such arguments, though to an extent germane to the subject, is apt to carry the discussion wide of the mark and to obscure the main contention. Most will readily concede that the M.D. London and F.R.C.S. England are qualifications beyond the reach of the average medical student within the time ordinarily at his disposal for obtaining a qualification to practise, and that the M.R.C.S. Eng., L.R.C.P. Lond., is a qualification intrinsically not inferior to the degrees granted by Scottish, Irish, and provincial universities. Yet the fact remains that the London medical student labours under the very grave disadvantage of not being able to proceed to an ordinary degree in medicine at the centre where he has been educated at the close of his curriculum. This position is almost peculiar to London. A result is that the metropolitan student is made, without just cause but by force of circumstances, to appear in the eyes of the public to belong to an inferior grade of practitioners. To lower the tests for obtaining the degrees of the London University does not offer a satisfactory way of removing the disability. London University graduates very reasonably object to that proposal, and since the degrees are not granted exclusively to students in the metropolitan schools they do not serve to identify the graduate with the school from which he hails. It is difficult to believe that the teaching and examining bodies (including the London University) centred in the metropolis cannot coöperate to institute a degree for London medical students exclusively, obtainable after tests equivalent to those required for the M.R.C.S., L.R.C.P. London, and do not see the need for action.

I am, Sir, yours faithfully,

Oct. 19th, 1908. THEODOSIUS.

LIFE ASSURANCE MEDICAL OFFICERS' ASSOCIATION.—Professor Thomas Oliver will read a paper on Some Medical and Insurance Problems arising out of Recent Industrial Legislation on Wednesday, Nov. 4th, at 8 P.M., at the Royal Society of Medicine, 20, Hanover-square, London, W. This is especially in connexion with the new and increased work of the association and members of the profession are cordially invited to attend.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS AT WASHINGTON.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

CONFERENCE AT PHILADELPHIA OF THE INTERNATIONAL ASSOCIATION AGAINST TUBERCULOSIS.—DEBATES, LECTURES, AND BANQUET.—ISOLATION *v.* REMOVAL OF PATIENTS TO HOSPITALS.—GOOD LAWS THAT ARE NOT APPLIED.—THE REPORT ON PROSTITUTION AND TUBERCULOSIS.

Philadelphia, U.S.A., Sept. 27th, 1908.

THE Congress has been well received at Philadelphia. Here the International Association against Tuberculosis met, transacted its business, and held a Conference at which members of the Washington Congress were invited to attend. A much finer hall was at the disposal of the members at Philadelphia than will be found available at Washington. The Philadelphia Horticultural Hall is a sumptuous building and there was ample room for all public and private meetings.

Governor STUART of Pennsylvania greeted the members of the Conference and of the Congress in person and not only wished them a hearty welcome but explained that in recent years the State of Pennsylvania had given £110,400 to private sanatoriums and hospitals and that last year the State Department of Health had spent £120,000 in establishing a village for tuberculous patients on Mount Alto, in Franklin county, where there would be room to treat 4000 persons. Then dispensaries were opened in most towns for the treatment of out-patients. Governor Stuart concluded by saying that the State was as proud of these works as of her commercial supremacy.

In the absence of M. Léon Bourgeois of Paris, who is President of the Association, Dr. LAWRENCE FLICK (Pennsylvania) was acting President, and he read, while the audience stood as a mark of respect, the names of the members who had died since the last meeting which was held at Vienna. The general secretary, M. PANNWITZ, on his side read the general report, which showed not only the progress achieved by the Association but the greater readiness of various Governments and also of local authorities to avail themselves of its advice. Then it was decided that in future, and so as to insure the presence of a sufficient number to carry forward the business, the executive committee should consist of 21 instead of six members, and the following were chosen for this purpose:—President: Professor Friedrich Althoff, Privy Councillor, Berlin. Members: Albert Calmette, director of the Pasteur Institute at Lille, France; Cornel Chyzer, Ministerial Councillor, Budapest; Bernhard Frankel, Privy Councillor, Berlin; Nathan Raw, Liverpool; Holger Roerdani, member of the Reichstag, Copenhagen; Alphonse van Ryn, secretary-general of the Belgian Anti-Tuberculosis League, Brussels; Christian Jensen, secretary of the Danish Anti-Tuberculosis League, Copenhagen; Bertil Buhre, secretary of the Swedish Anti-Tuberculosis League, Stockholm; Ivan Gabrilovitsch, chief physician of the Imperial Sanatorium for Lung Diseases, Halida, Russia; Dr. Telcky, Vienna; Hermann von Schroetter, Vienna; Georges Bourgeois, secretary of the Permanent Anti-Tuberculosis Commission of the Ministry of the Interior, Paris; Louis Guinard, Bligny, France; J. J. Perkins, London; Richard Freund, Otto Werner, Martin Kirschner, Privy Councillor, Berlin; Joseph Walsh, President of the Pennsylvania Anti-Tuberculosis Association, Philadelphia; M. W. Pynappel, member of the Central Health Council, Zwolle, Netherlands; and Clemente Ferreira, Sao Paulo, Brazil.

In the evening Dr. C. THEODORE WILLIAMS (London) gave a lecture under the auspices of the Phipps Institute on "The Evolution of the Treatment of Pulmonary Tuberculosis." He traced the subject back to the time of Hippocrates, Aretæus, Galen, and Celsus, when milk and sea voyages were already recommended. The fact that the duration of life in patients affected with this disease averaged only two years in the time of Laennec was attributed to the lowering treatment rather than to the greater severity of the disease. When a tonic treatment, cod-liver oil, and good food were adopted the average duration of the disease increased from two to eight years. Dr. Williams, in discussing various remedies, gave the palm to cod-liver oil. Creasote reduced catarrh but it did not have the same direct action on the tubercles. While approving of outdoor treatment Dr. Williams insisted on graduated exercise and some form of labour when there was no fever. The mind must be treated as well as the body and the fact of doing some work inspired hope and stimulated vitality. Making observations with anti-tuberculous serum taken from a horse on nine patients he only found it of use when applied in the early stages and when there was no fever.

On the first day the visitors were shown the Philadelphia University and there was a reception in the evening at the Bellevue-Stratford Hotel. On the second day, which was Friday, Sept. 25th, Professor ROBERT KOCH (Berlin) was prevailed upon to say a few words expressing his confidence in the efficacy of Governmental regulations for the prevention of tuberculosis if strictly enforced. He further argued in favour of isolating patients in their own homes. Formerly, said Professor Koch, a single person could cause a widespread epidemic. Cholera for centuries devastated Russia and spread over Europe. But now five epidemics of cholera had occurred in Russia during the last ten years and not one of them crossed over the frontier into Germany. Yet traffic was not interrupted, the cases were simply kept apart and isolated. To-day, however, Professor Koch was less hopeful in regard to the isolation of cases of tuberculosis. He found that the isolation of leprosy in Norway had not reduced the prevalence of the disease, because the early symptoms were so obscure that a patient could contaminate many people before he was himself aware of his own condition. The same might be said in regard to tuberculosis. But all patients must at least be isolated from the beginning to the end of the third or most advanced stage. To send a patient home from a sanatorium to die would cause as much harm as if he had never been to the sanatorium. Much more good would result if such a patient had been isolated in his own home from the beginning.

Dr. HERMANN M. BIGGS deplored the want of sufficient hospitals in New York to isolate dangerous cases and he thought it more urgent to attend to this class than to the incipient cases.

Dr. FLICK denounced both tobacco and alcohol as predisposing to tuberculosis, specially when used to excess. He urged the importance of prevention and of cleanliness. In the water used in carrying out cleaning operations the tubercle-bearing matter became attenuated. It did not survive rain or sunlight, and in any case if not always sterilised it became harmless. All germ-bearing matter should be burnt or ejected from dwellings and every house inhabited by a tuberculous patient should be registered, so that all the precautions might be enforced. This should be the work of local sanitary authorities. Dr. Flick also protested against the great harm done by athletics. Moderate exercise, of course, was useful, but it was folly for those who showed signs of disease to imagine that they could make themselves strong by resorting to athletic exercises. On the contrary, over-development of the muscles was, he maintained, an undoubted cause of tuberculosis, and would convert a benign form of tuberculosis into a malignant form.

Dr. R. W. PHILIP (Edinburgh) urged the necessity of dealing with tuberculosis on the same principles as had been so successfully applied against other infectious fevers. Therefore in Edinburgh, as far back as 1887, they had started dispensaries so as to become acquainted with all that was happening in regard to that disease. Then the cases were sorted and classified, and some were sent to sanatoriums and others to the hospitals. Between these two extremes there were a very large number of cases that remained in their homes but under surveillance, the nearest dispensary rendering all possible help.

Many other speakers discussed the question of sanatoriums and the home treatment of patients, and Dr. SAMUEL G. DIXON, the State Health Commissioner of Pennsylvania, treated the legal side of the question. He said that while the power of the State to enact health regulations was ample, the enforcement of the same was often extremely difficult. Health regulation should be carried out in a summary manner. But actually the process of indictment was far too slow and cumbersome. Dr. Dixon gave a wonderful enumeration of the rights of the people in Pennsylvania which should make that State a place of perfection. "They have, it appears, the right to know exactly where the germs of disease exist.

We were not told who is to give this information. Clothes used by tuberculous patients must neither be sold nor even sent to the laundry without having been first disinfected. A workman or a workwoman before entering a mill, factory, or workshop, may insist that these places where they are to work shall be free from the sputum of tuberculous persons. The same applies to hotels and public conveyances. Further, it is illegal for tuberculous persons to touch articles of food or to sell the same. The law demands that flies shall be prevented from spreading infection and that drinking water shall not be polluted with tubercle bacilli. This does not prevent towns draining into rivers above intakes for drinking water and often water containing crude sewage is served unfiltered for drinking purposes. It is only quite recently that a filtering plant has been constructed for the sewage-loaded water-supply of the city of Philadelphia, and I am assured that even now some of the water is served in an unfiltered condition. Again, we were told that all objects used by the public, such as telephones, cups at drinking fountains, pencils, and penholders, should be cleaned and disinfected daily; thus we find quite ideal stipulations, the difficulty is to get them applied.

In the evening a luxurious and well-appointed banquet was given in the great banquet hall of the giant sky-scraper hotel, the Bellevue-Stratford. The mayor, Major Reyburn, presided, and in the course of his speech alluded to the trials of municipal government, which, however, the Congress was to solve and to remove by creating "a glowing brotherhood amongst men." The fact that so many eminent men had travelled immense distances to solve health problems proved that a feeling of this description must be strong in the world. Here, in any case, was an assembly of men who do not strive to invent wealth-producing patents but come to tell and to show all they know so that others might be as wise as they were. "The light is around us," exclaimed the Mayor of Philadelphia, "and we should be proud to have these givers of light as our guests." That the city of Philadelphia was alive to the importance of the matter might be seen from the fact that probably 60 per cent. of the cases of tuberculosis were registered and the deaths from this cause had been reduced 10 per cent. during the last year.

Dr. JACOBI delivered a very long address which might have been welcomed in one of the sectional meetings but was not so suited to an after-dinner speech. He lamented the excess of text-books and of medical journals, some 300, many of which might be missed without injury to anyone. He also complained that while in Europe universities were Government institutions, here they were the pets or toys of a wealthy man or woman.

The representative of the German Government, Dr. VON LEUBE, rose next and the band played "The Watch on the Rhine." Then came Professor G. SIMS WOODHEAD (Cambridge) and the band played "God Save the King." Dr. Woodhead was to propose "The Laboratory, its Lesson and Promise," and naturally protested that an after-dinner speech did not allow time to go beyond the fringe of so great a subject. Such speeches reminded him of the American saying, "If you do not strike oil in three minutes you had better stop boring." The task of science was limited only by the boundary of possible knowledge. They seemed from time to time to get further knowledge on some small fact which had been secured. In the old days when dealing with the arts and with philosophy there were periods when greater heights were attained. In the study of nature, however, permanent additions were made and they really did seem to get further forward. Many studies gave apparently but small results, still they all had hopes of restoring the great image of truth to its pristine beauty. But for the works of the German laboratory they could not bring the message of hope which was now carried to those who formerly could only look forward to a miserable life and an early death. The bacillus they now saw was the very foundation of tuberculosis itself. If once they could deal with it they were in a fair way to solve the problem. The practical outcome of laboratory work might lead to some mistakes, but, on the whole, the results would be a genuine progress. The lesson was that they must go back to nature and their mission was to regenerate mankind.

Dr. ALBERT CALMETTE (Lille) was greeted with "The Marseillaise" when he rose to speak, and he pointed out that in promoting the international organisation to combat tuberculosis they were teaching themselves the lesson of human solidarity. The great number of foreigners who followed the clinics in France never failed to express their satisfaction and the French thanked them for their compliment. Dr. Calmette was pleased to have been called upon to speak concerning the duties of the medical man towards his patient—though it seemed a little difficult to understand how this subject could constitute a toast. Dr. Calmette, however, bravely took up the question, pointing out that the physician's mission was now much wider than it had been. In dealing with tuberculosis the medical attendant must not only consider his patient, but he must also possess considerable knowledge of bacteriology, of hygiene, and of sociology. He must not only know what had happened but what was going to happen. He must know sanitation so as to disinfect during as well as after the malady. To prevent dangerous conditions he must not only teach the patient's family and friends, but also the local authorities, in fact, the entire community where he lives. This was more and more difficult. He must unite and harmonise all the efforts made; the hospital, the dispensary, the sanatorium, each had a great and educating mission. Robert Koch had helped them to do this but the most difficult to move and to teach were their governments and rulers. They were very slow to move; nevertheless, great progress had been achieved, and this was in a large measure due to the International Association against Tuberculosis.

Dr. FLICK now rose to propose a toast to tuberculous institutions. It may be remarked that these toasts, which seemed more like essays than toasts, were never drunk. The speakers spoke each to his subject, but the glasses were never raised and the toasts were not put. Dr. Flick alluded to the wonderful results of compulsory insurance in Germany. Citizens must call upon their governments to apply the teachings of science.

Dr. LEONARD PEARSON spoke admirably on behalf of the animal world, especially cattle, which numbered 73,000,000 in the United States, that also suffered greatly from tuberculosis. This among other things reduced the amount of milk, and to get one pint more milk per cow would mean an immense increase of revenue without any increased outlay. He maintained also that bovine tuberculosis had been found in man and was glad that the State of Philadelphia was taking measures to prevent the spread of tuberculosis among cattle.

It was past midnight when Professor ROBERT KOCH rose to propose the last toast entitled, "The Foreign Delegates"; thus, according to the printed programme, he was called upon to drink his own very good health. But, as I have already remarked, the master of the ceremonies quite forgot to call upon us to drink for anything or anybody. Nor were the speeches limited to any given time. Therefore, it was so very late when Professor Koch spoke that it was best to content himself with the compliments and expressions of satisfaction that are so natural on such occasions. He further strove to cheer all present by expressing his conviction that there is a cure for tuberculosis.

On Saturday morning, Sept. 26th, the final conference was held at Philadelphia and it was of unusual interest, particularly as some of the positions taken up by Professor Koch were strongly controverted. Dr. Flick, it is true, sought to show that Professor Koch had been misunderstood. He did not say that human beings could not be infected by a cow, but that such cases were so rare as not to be of much importance. This explanation was, however, met by several speakers who energetically declared that milk from tuberculous cows was dangerous, especially to children.

Dr. J. F. HEYMANS, the well-known veterinary surgeon of the University of Ghent, moved that a special commission should be appointed to study this question.

This was adopted and the following were elected: Dr. Koch (Germany), Dr. Pearson (University of Pennsylvania), Dr. Bernhard L. F. Bang (Denmark), Dr. Heymans (Belgium), Sir John McFadyean (England), Dr. Saturnin Arloing (France), Dr. C. H. H. Spronk (Netherlands), Dr. Anton Weichselbaum (Austria), Dr. Gotthold Pannwitz (Germany), and Dr. Sherman G. Bonney (Denver, Colorado). Of these *savants* five, Dr. Pearson, Dr. Bang, Dr. Heymans, Sir J. McFadyean, and Dr. Arloing, are famous veterinarians. Dr. Pannwitz is a specialist in children's diseases and chief physician of one of the branches of the Red Cross Society.

Professor ARLOING (Lyons) spoke in regard to various precautions and notably the washing of linen from tuberculous patients. He suggested that this should be undertaken at the hospital laundries which might thus help in the isolation of the patients who remained at home.

Professor PHILIPS said that there were a large number of cases that were not suited for either the hospital or the sanatorium and were better at home. He did not approve of costly institutions and wanted a system of home relief and supervision.

Dr. JACOBI opposed this and Professor Koch's idea of isolating the sick in their own homes. In the majority of cases these homes consisted of only one or two rooms in which an entire family lived.

Professor ARLOING gave some point to this in dealing with quite another matter. The question of the part played by prostitutes in the spread of tuberculosis had been discussed at previous congresses and it was decided that inquiries should be made. This had been undertaken by Dr. Carry of Lyons who could not be present and therefore had asked Professor Arloing to report the results. It was not found practical to investigate the matter in licensed houses because as soon as a tenant of such a house was ill she was sent away. Therefore Dr. Carry only examined prostitutes who were not confined in houses but walked the streets. He had examined in the ordinary clinical manner, by auscultation, more than 300 prostitutes and the cases of tuberculosis found among them only amounted to 7 per cent. On the other hand, when examining the workwomen of Lyons the proportion of cases of tuberculosis amounted to 22 per cent. This he attributed to the fact that prostitutes, as a class, were somewhat indolent and not prone to overwork themselves, that they ate well, had fairly large rooms to sleep in, and took a great deal of out-of-door exercise.

Though some translations into English from the French and the German had been made of the former speeches, the official interpreter entirely omitted any reference to the above very significant figures and report.

Dr. N. RAW (Liverpool) spoke against compulsory notification of tuberculosis as unsatisfactory and impracticable. He insisted on the importance of the inspection of milk and food and urged the extermination of tuberculous cattle. He agreed with Professor Koch that the principal cause was contact with advanced cases, but it was not possible to isolate the majority of such cases; they must be removed. It might be hard, but they had to protect the healthy and especially the children.

Dr. FLICK advocated hospitals for advanced cases in the centres where these occurred, so that the dying patients might be within walking distance of their former homes and of their friends; they would then consent to be removed. In Philadelphia they had taken two old houses in the worst quarter and renovated them and brought in all the advanced cases. In three years of this action the district which had the highest death-rate from tuberculosis had now the lowest death-rate from that cause. When a patient had still some energy he might be rendered harmless in his own home, but when helpless he must be removed to the hospitals. There were cases where some of the linen should be changed every 15 minutes and the patient never left. How could this be done in a private house or dwelling?

During their stay at Philadelphia the visitors were shown several things of considerable interest, but these I must describe on some other occasion, for it is now necessary to hurry off to Washington, as the conference is over and now the Congress is about to begin.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The New Infirmary.

Now that the new infirmary is practically complete it may be allowable to summarise briefly its chief features and the provision made for carrying out its purpose—the relief of the sick and injured. The chief fronts are to Oxford-road to the west and Nelson-street to the north. The Oxford-road elevation consists of three large four-storeyed blocks of buildings, the two outer ones having each a tower at its inner end which adds much to the effect of the whole front. These two blocks are devoted to the teaching department on the left and the nurses' home on the right. The middle block is the administrative department, and in its centre is the chief entrance to the infirmary. On the right hand are various offices for the superintendent, cashier, and clerks, a board room, and committee rooms. On the left are the resident medical officers' dining-room, &c., a medical board room, and committee rooms. Above these are residential quarters for the general superintendent, lady superintendent, and medical officers on the first and second floors, and for domestic servants on the third floor. The roof is flat and can be used as a promenade, and no doubt will sometimes be gay with flowers. The nurses' home on the right seems arranged with due regard to the comfort of these important members of the working staff. There are nearly 200 separate bedrooms as well as sitting- and writing-rooms. Each nurse will have a bedroom to herself. There are also many bedrooms and sitting-rooms in this part of the building for wardmaids and laundresses. The blocks on the right and left are connected with the central one by a bridge on each side, and these bridges add something of the picturesque to the Oxford-road front. The teaching block on the left is thoroughly equipped for students, both women and men. There are several very spacious common rooms for lectures and demonstrations, while the upper floors of the block are chiefly occupied by the lecture theatre and museum. Going east along the central corridor the stores department is arrived at on the left, and on the right are dining-halls for the nurses and servants. The cooking arrangements for an establishment where about 1000 people will be supplied day by day with varied food must of necessity be extensive and well arranged, and the kitchen appliances to be found here will allow of all this being done with nicety and ease. There are no ordinary ranges, but everything will be cooked by gas or steam. By the kitchen, which is 60 feet long, 35 feet wide, and 29 feet high, are the sculleries and larders, and the latter have refrigerating rooms for milk and meat for use in hot weather. Among the labour-saving machinery in the sculleries is a large plate- and dish-washing machine which will "wash up" in a few minutes, while if done by hand the same work takes hours. The food for the patients will be run along the covered ways and up or down lifts to the wards in special wagons. The out-patients' department and the accident room are on the Nelson-street side, where the general entrance for patients is situated. The waiting hall for out-patients will seat 400 people and on one side of it are the consulting- and dressing-rooms. The accident room is near and patients conveyed by ambulance or other vehicle will be taken to a covered platform having direct access to the room. Cases where infectious disease is suspected will be examined in a separate pavilion. In the waiting hall for out-patients, it should be mentioned, there is a refreshment counter where a cup of tea can be obtained by those waiting. The chapel, which will seat 200, is behind and to the left of the main entrance. Mr. Arnold, the contractor, has presented a beautiful stained-glass east window, with which the fittings of the chapel harmoniously blend. It would occupy too much space to particularise all the special appliances to be found in the hospital, but in the basement of the out-patients' block there are rooms for electrical and x ray work, massage, and special baths; and at the south end of the block are special wards, one for cases of burn, and an operating theatre. Above the casualty department are the wards for women's diseases and for diseases of the ear, &c. The surgical and medical wards, which are on the pavilion principle, having grass spaces 60 feet wide between them, are situated behind the main entrance and are not seen from Oxford-road. The pavilions are ten in number and run very nearly north and south, at right angles to the passages running east from the administrative block which faces Oxford-road, and are, of course, connected with the teaching and receiving blocks and the nurses' quarters. The wards for men have 22 beds each and those for women 18 beds, and at the south end of each is a balcony where patients can sit or lie in the open sunshine which, more frequently than some people imagine, generously visits Manchester. The sanitary conveniences are in detached towers at the end of the wards. The wards are heated with hot water radiators. The walls and ceilings, which are painted and varnished, are joined in a curve, so that there are no corners or angles to catch the dust. The doors all through the

building are perfectly flat and smooth on both sides, and are made of polished oak. The surgical wards are like the medical, but each of the five groups or units contains two wards for men of 16 beds each, and one ward for women of 20 beds, while one-bed and two-bed wards make the total in each unit 60. For each unit there is a separate block to the north of the covered way for the operating theatre and its accessories on the same level. Other buildings to be seen are the mortuary, the pathological laboratory and lecture room, the isolation block, and the laundry, which is at the eastern boundary of the 13 acres on which the infirmary stands. There are three lodges, one in Oxford-road, one in Nelson-street, and one on the eastern boundary in Berlin-street. All the details seem to have been thought out with the most far-seeing care, and nothing appears to have been forgotten. The water-supply, to provide against a breakdown, has been taken from three of the mains, the electricity from two mains, and the operating theatre is further provided with a low tension supply from a storage battery. The rooms for students are such a contrast to those in the old hospital in Piccadilly that they will appear palatial, and the same may be said of those for the honorary staff. Although the new infirmary has 48 separate blocks of building it is so arranged that the run of it will be easily acquired. Though more has been said than was intended, more still has been left unsaid. The impression that remains is, that though the work has been costly it has been well done and the money not wasted in needless ornamentation, but with the view of using all the aids that knowledge can give for the good of the sick and injured.

Gathering of Former Residents of the Old Infirmary.

The meeting and dining together of former residents of the old infirmary, which was noticed in the last issue of THE LANCET, was indeed a notable event. It was a proof that a strong feeling of attachment to the infirmary, of *esprit de corps*, bound together the body of residents when 263 met together at the dinner at the Midland Hotel. Considering that the ends of the earth claim many, while many more are scattered through the length and breadth of our land, it was a large assembly brought together to say farewell to the scene of some perhaps of their happiest days. Most interesting was it to see Mr. Frederick Melland, perhaps the oldest practitioner in Manchester, whose age "is as a lusty winter, frosty but kindly," enjoying the going back to old times, as with youth renewed. So it was with many more who were glad once more to visit old scenes and renew old friendships, and to feel that amid many days more or less grey one had come to be marked with red letters. One often hears that the loquacity of man more than equals that of the other sex, and at this dinner it might seem so, for everybody seemed anxious to talk to everybody else, so that the speakers could scarcely be heard through the much speaking of everyone else, which was, however, much better than if good fellowship were silent or dead. Manchester has undertaken a great responsibility in replacing the old infirmary with one on so large a scale, but Lancashire and Cheshire, which will both reap benefit from it, may be depended on to come to the aid of the city.

Oct. 27th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

The Yorkshire Association of Graduates of the University of Glasgow.

THE large number of graduates of Scotch universities residen in Lancashire and Yorkshire has led to the formation of numerous university clubs and associations, but until recent years the development of these societies has been more marked in Lancashire than in Yorkshire. Dinners of the graduates of the older English universities have, indeed, been held from time to time in Leeds but the recent growth may be traced to the formation of the West Riding Aberdeen Graduates' Club. This was instituted some eight years ago and meets for its annual dinner alternately at Leeds and at Bradford. The Glasgow University graduates started their association in 1906 and last year a most successful inauguration of an association of Edinburgh graduates was held in Leeds. The graduates of Glasgow were fortunate in securing as chief guest at the annual dinner, which was held in Leeds on Tuesday, Oct. 20th, Principal Donald MacAlister, whose connexion with the University, though of recent date, has been already of the utmost benefit to its welfare. Among other guests who were present were Dr. Bodington, the Vice-Chancellor of the University of Leeds, Professor Smithells, Professor T. Wardrop Griffith, Professor de Burgh Birch, and Professor H. Littlewood, and in all about 50 were present at the dinner. Dr. W. McGregor Young, who occupied the chair, in proposing the health of the chief guest, paid a warm and eloquent tribute to the great abilities of Dr. MacAlister, referring to his early connexion with the University of Aberdeen, to his work at Cambridge, and to his powers of organisation and business capacities as shown by his conduct of the work of the General Medical Council. He congratulated the University on having secured the services of one on whom nature had showered her best gifts with a bounteous hand. Dr. MacAlister's reply was greatly appreciated, being not only full of interest, but, as was natural, gratifying to Glasgow men from its including a reference to the many distinguished ornaments of the University. The toast of "The University of Glasgow" was very happily proposed by Professor Smithells, himself a former student of Glasgow, whither he had gone to sit at the feet of Lord Kelvin, then Sir William Thomson. "The University of Leeds" was proposed by Dr. Forsyth, the headmaster of the higher grade school, in a speech of solid excellence which will long be remembered by all who heard it, and it was replied to by the Vice-Chancellor who emphasised the remarks of a former speaker that it was with no feelings of jealousy that the authorities of the University of Leeds witnessed the formation of such societies beneath its shadow, for they were attended with nothing but good and did much to foster the University spirit and sentiment in the large industrial centre in which it was situated.

Oct. 27th.

NEWCASTLE-UPON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

A Medical Defence Fund.

A Medical Defence Fund has been established in connexion with the North of England branch of the British Medical Association. The fund will be administered by a committee of the branch. A letter recently circulated and signed by the joint secretaries and treasurers, Dr. J. Charles of Stanley, Co. Durham, and Dr. A. M. Martin of Jesmond, Newcastle-upon-Tyne, states that the fund is the outcome of the work in collective medical defence now undertaken by the branch. The objects of the fund are as follows:—

I. To provide financial, legal, or other assistance or compensation to any member of the B.M.A. carrying on practice in the branch area, who shall suffer loss or expense in the carrying on of contract practice in accordance with the rules and customs of the branch, or by his adhesion to other rules and principles of the branch, or of any division in the branch area.

II. To insert warning or cautionary notices in the medical or lay press concerning any contract appointments or disputes in the branch area.

III. To pay or contribute towards any travelling, boarding, clerical, or other expenses of any member whose contract practice shall be threatened, or of any person or persons or deputation rendering assistance in connexion therewith, either directly or indirectly.

IV. To discharge any expenses incurred in the promotion, extension, or management of the fund, or in the endeavour to promote its efficiency, or to increase the number of subscribers thereto.

V. To carry out or assist any proceeding which shall in the opinion of the committee be necessary or advisable in the promotion of any of the above objects.

The letter proceeds to explain the special needs of such a fund at the present time, "when the colliery practitioners of Northumberland are threatened with another struggle with the miners over the fortnightly subscription, and the medical men in various parts of Durham are preparing to resist the aggressions of the friendly societies; indeed, it cannot be too strongly insisted that this is *not* a matter solely or even mainly for the colliery doctor." The cost of the work is to be met by a separate fund subscribed by the branch members themselves and no grant is expected, at any rate at present, from the general fund of the association. The fund is to be administered, so far as possible, for the benefit of all the members of the branch, and all its members are

invited to join it, but only those who actually subscribe to the fund will have any personal claim upon it for assistance or compensation. The membership subscription has been fixed for the present at 5s. per annum. Foundation donations—a contribution of 5 guineas is suggested as the amount of such donations—are solicited from members specially interested in contract practice. And further to strengthen the fund and to provide against any extraordinary drain on its resources—e.g., a long struggle with the miners or friendly societies—members are asked if they would be willing to subscribe to a "Guarantee Fund," and to state the amount which they would be prepared to contribute weekly in such a contingency.

Vacancy in the Coronership for Newcastle.

The city council has arranged to hold a special meeting on Tuesday, Nov. 3rd, for the purpose of appointing a coroner for the City and County of Newcastle-upon-Tyne, the office being now vacant on account of the death of Mr. Hoyle. It is understood that several applications have already been submitted, one being from a medical man and the remainder from solicitors practising in the city. It appears that at least one of the applicants for the coronership is a member of the city council and the Newcastle Ratepayers' Association has addressed a communication to all the members of the council the object of which is "to deprecate members of all public bodies becoming candidates for posts in their own disposal" and further to point out that the principle of members of public bodies not being eligible for public office in their own disposal was laid down in an order by the Registrar-General some three years ago and that this order has not yet been withdrawn.

Death from Excessive Cigarette Smoking.

A coroner's inquest was held in Newcastle recently on the body of a youth aged 20 years. The evidence of the father, with whom the deceased had resided, was to the effect that his son had on the previous day complained of pains in his head. He became very ill and vomited and died before the arrival of a medical man. His son was rarely seen without a cigarette in his mouth and was known to smoke as many as 50 cigarettes a day. The medical evidence showed that death was due to cardiac failure caused by excessive cigarette smoking and nicotine poisoning.

Oct. 27th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Infantile Mortality in the Rhondda Valleys.

THE high rate of infantile mortality in the Rhondda urban district during the third quarter of the year is specially commented upon by the medical officer of health (Dr. J. D. Jenkins) in his report for the month of September. During the 14 weeks which intervened between June 27th and Oct. 4th there were 350 deaths of children under one year of age, a number equal to an infantile mortality rate of 183 per 1000 births. More than one half—actually 198—died from diarrhœa, the death-rate from this disease being equal to 5·9 per 1000 of the population per annum. Relatively only a small percentage of the breast-fed infants succumbed to the disease, showing that a common cause was the want of proper care in the selection, preparation, and administration of the children's food. It appears that the only special measure adopted so far by the district council with a view to reducing the diarrhœa death-rate has been the distribution to the mothers by the registrar of births of cards giving instructions as to the feeding of children. These cards have been distributed in only a portion of the district and Dr. Jenkins gives some interesting comparative statistics of the results which have followed the distribution. Benefit has resulted only to a limited extent, and it is very evident that other measures must be taken if this deplorable loss of life among young children is to be checked. Dr. Jenkins considers that among the factors which influence the high death-rate among children in the Rhondda are the high birth-rate, the high marriage-rate, and the early age at marriage, as many as 29 per cent. of the married women in the district being under 21 years of age. Incidentally he refers to the number of refuse-tips in the neighbourhood of dwelling-houses as a probable cause of diarrhœa. The district council will be well advised if it gives effect to the recommendation of its medical officer of health and appoints one or more women as health visitors for the purpose of advising not only mothers but expectant mothers.

Cardiff Water-Supply.

The Cardiff corporation is considering with commendable caution the proposed scheme for increasing the water-supply of the city.[1] Before committing the inhabitants to an expenditure of nearly a quarter of a million sterling in the construction of a third reservoir in the Taff Fawr Valley in Breconshire several alternative schemes have been considered. The latest involved the carrying out of constructive works jointly with the Merthyr corporation and at one time it appeared as though such coöperation would be mutually beneficial. A careful consideration of the proposal by the Cardiff waterworks committee has resulted in a recommendation that it should not be adopted. The reasons given for this conclusion are that the water at the Beacons is derived from gathering grounds free from cultivation, the difficulties attending dual control, and the anticipated greater cost of the Merthyr undertaking.

Oct. 26th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

University of Edinburgh: Rectorial Election.

THE rectorial election took place on Saturday, Oct. 24th, amidst great excitement in the University quadrangle and outside the University. The result was known about noon, and, as was anticipated here last week, one of the political candidates was at the top of the poll. The numbers were: Wyndham, 826; Churchill, 727; Osler, 614. The students held a successful torch-light procession at night. It is many years since a rectorial election has been conducted with so much keenness and heat on all sides. Some of the proceedings have passed from horse-play back to the love of destruction of primeval man. The student is allowed much latitude at such a time and much is forgiven him. It is a fact certainly worthy of note that the ways of the supporters of the three candidates did not materially differ. Those who supported science and literature as against party politics seem not to have been superior in their methods to the political partisans. Now that the battle has been fought and won and lost things will, it is hoped, settle down quietly for the rest of the term, and the students will resume their work freshened by the excitement of the election time.

Death of Mr. R. Fitzroy Bell.

The Edinburgh afternoon papers which recorded the result of the rectorial election also contained the intimation of Mr. R. Fitzroy Bell's death. This intimation must have been a shock to many to whom he was known personally as well as to those who only knew him by name. Mr. Fitzroy Bell was not a medical man, and yet he took such a prominent part in university affairs at one time that there could not have been a student in any Faculty who did know about him. He along with some of his friends took the foremost part in the steps that led to the formation of the Students' Representative Council and to the founding of the Students' Union. With both these his name will ever be associated. By profession he was an advocate, but although a man in middle life he had for some years lived in Berwickshire. At the last general election he unsuccessfully contested that county in the Unionist interest. Mr. Fitzroy Bell's other public work of importance was performed when he was secretary to the last Scottish Universities Commission. He was only about 50 years of age and yet seems to have died from cerebral hæmorrhage. He leaves a widow but no family.

St. Andrew's Ambulance Association.

At the annual meeting of this association the report showed that during the year 7620 calls were made on the wagons of the association. In Glasgow alone 5114 calls were attended to, which shows the great advance that the association has made when compared with 372 calls in the year 1883. Since its presentation two years ago the motor ambulance has covered 8924 miles, and had been found very useful for long distance removals. At the same time the directors did not think

[1] THE LANCET, July 4th, 1908, p. 56.

that either on the ground of expense or efficiency motor ambulances were likely to displace horse-drawn vehicles at present.

New Sanatorium for Forfarshire.

The new sanatorium which has been erected near Forfar through the generosity of Miss Lowson of Balgaires was opened on Oct. 17th by Dr. T. F. Dewar, medical officer of health of Fife. The sanatorium, which is situated on the edge of Montreathmont pine woods, has a southern exposure and is a very handsome structure. It contains a large ward for six beds, two private wards, a dining-room, nurses' room, and other accommodation.

Crathie and Braemar Medical Officership.

The vexed question of the medical officership was again under consideration at a meeting of the Crathie and Braemar parish council held on Oct. 21st at Crathie. The sub-committee appointed to inquire after and to secure a suitable medical officer had no report to make, all the applicants having withdrawn after receiving information and particulars in regard to the appointment. It was decided in cases of medical relief to employ the nearest medical man until such time as an appointment can be made.

Medical Officership of Rochdale.

Dr. A. J. Anderson, who was on Oct. 23rd appointed medical officer of health of Rochdale, is a native of the Garioch district. After graduating in arts and science at the University of Aberdeen he became a teacher. Subsequently he studied medicine at the University of Edinburgh and after taking his degree acted for a year as resident surgeon at the Edinburgh Royal Infirmary under Professor T. Annandale. For the past two and a half years he has acted as resident physician at the City Hospital, Aberdeen. Dr. Anderson is a D.P.H. of the University of Aberdeen.

Oct. 24th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Epidemic of Enteric Fever at Clontarf.

ONE of the results of the epidemic of enteric fever at Clontarf has been the full discussion of the various views of its etiology in the Nisi Prius Court before the Lord Chief Baron on Oct. 21st. Mr. Thomas Picton Bradshaw of Mount Temple, Clontarf, had applied the week before for an interlocutory motion to restrain the Dublin corporation from continuing to deposit objectionable matter on the sloblands at Fairview so as to be detrimental to the public health, and the hearing had been adjourned. Counsel stated that notice had been served on the corporation to prevent the dumping of any objectionable matter on the Fairview sloblands, and it was now asked that there should be a restriction granted against the deposit of street rubbish or other matter until the same had been deodorised so as not to create a nuisance or be injurious to public health, and to prevent them allowing matter already deposited to be there without being deodorised. The affidavit of Mr. Bradshaw, which was read by counsel, was a strong and lucid statement of the view that the epidemic of enteric fever has been brought about by the dumping of objectionable refuse, which was formerly taken out to sea, on the sloblands. Mr. Bradshaw had called the attention of the corporation to the existing state of things and asked that body to discontinue the nuisance. A letter from the town clerk was received in reply, in which it was stated that according to the opinion of Sir Charles Cameron, which was corroborated by that of Surgeon-General D. E. Flinn, the epidemic of enteric fever was in no way attributable to the main drainage works or to the filling in of the sloblands, and it was added that the corporation had taken, and was continuing to take, every care to prevent objectionable matter being dumped on the sloblands. But personal inspection showed the foreshore "coated all over with filthy black mud from which an abominable smell" proceeded. "The outfalls of the old existing sewers are carried through filthy open channels which remain uncleaned and blocked up with old buckets, jars, papers, and other refuse, while on the surface of the ground I found in several places decaying fish, old rabbit skins, decaying melons, banana skins, and other offal." Paper and other refuse had been blown to the applicant's avenue from the sloblands at various times during the previous week. An affidavit was put in from Dr. J. Craig concerning the sanitary danger of the sloblands works. On the other hand, the affidavit of Sir Charles Cameron lends vigorous support to the theory of milk infection, for he says that the epidemic is practically confined to the customers of a particular dairy. He continues: "The infected area is east of the railway embankment and is not close to the slobland. There was one case of typhoid in Fairview, which fronts upon the slob, for the last three years. None of the people working upon the slobland, or on the embankment, or at the main drainage works of Clontarf have had typhoid fever. The black mud referred to in Mr. Bradshaw's affidavit is the mud of the slobland and the work of filling in carried on by the corporation is lessening, and will eventually wipe out, the nuisance caused by this mud, which is the result of generations of saturation by sewage of the slobland. The recent hot weather was unprecedented for this time of the year and has been the cause of making the smell from the slobland worse than it otherwise would be. In reply to Mr. Bradshaw's statement as to the health of Clontarf before annexation, the following are the facts: In the five years ending 31st December, 1901, the death-rate from all causes was 19·4 per 1000 persons living, and the zymotic death-rate was 2·3, which was very high. In the next five years immediately following the annexation of Clontarf and ending on 31st December, 1906, the general death-rate was 14·1 and the zymotic rate 0·86 per 1000, which was a remarkable decrease. The area infected contains 656 houses. The suspected milk was supplied to 157 of these; 56 of these were invaded by typhoid fever and 94 cases of fever occurred in them. The remaining 499 houses were supplied by 28 dairies, and in these there were only five persons affected. The cows of the suspected dairies were distributed into three groups. One group of 13 were in the dairy premises suspected, and the remainder of 58 cows were depastured in two different places. An examination of the dairy premises showed that great cleanliness prevailed. All the cows were inspected by the veterinary surgeon and certified free from disease. I believe that the milk got infected from some person connected with the dairy. I am of opinion that deposit of any vegetable or other refuse (if any) which might have been deposited on the slobland of Fairview has not been even a remote cause of the epidemic in Clontarf." That Fairview is beside the slobland and that the great locus of the epidemic is well away from it are geographical facts. And one of the most distant sections of the same bears a terrace consisting of five houses. Of these three were supplied from the suspected dairy, and each is infected (14 cases in all), while the two houses supplied from another source have remained free. This fact, which I have ascertained by private inquiry, is a remarkable item of etiological evidence. It is noteworthy, however, that the dairyman and his employees have all failed to display symptoms or to offer the requisite bacilli or to respond to the Widal test. The Lord Chief Baron refused to grant an interlocutory injunction and allowed the motion to stand over till the hearing of the case. The case could be heard in a very short time and he would put the defendants under very strict terms for doing everything towards speeding the hearing. There was not a particle of evidence that the deposit of stuff on the foreshore had any influence in producing the typhoid fever. Any evidence there was was the other way, so that he must deal with the case exactly as if there had been no outbreak of typhoid fever. But the application was for the purpose of restraining a nuisance on the ground that it was injurious to property and personally offensive to one of the inhabitants, and he had no hesitation in saying that upon the evidence before him he was of opinion that there was a nuisance and that it was not authorised at all by the statute under which the order was made. He thought that the case should be heard at the very earliest moment, and let the motion stand for the hearing of the case, and let the costs of the motion be costs in the case.

The Boarding-out of Pauper Children.

Since I last called attention to the subject there has been a very marked increase in the interest taken throughout the country in the system of boarding out pauper children. In Tipperary, Waterford, and other southern counties the removal of children eligible for such arrangement has either been accomplished or is in active contemplation. Clogheen

is one of those unions which, as the annual report of the Local Government Board pointed out, has not given the system a trial. A special meeting of the guardians is now to be summoned for the purpose of considering the question, which affects 21 children in the workhouse. With the example of Clonmel before them, which has reported excellent work and results in this connexion, it is generally believed that the meeting is likely to decide that it is best in the interest of the little ones and the ratepayers that the children should be sent to foster homes, and there be given—under the supervision of an efficient committee—the fullest chances of improvement, social and moral, as well as physical. The whole movement owes its initiation in chief measure to Mrs. J. Wyse Power.

The Milk-Supply of Kingstown.

A discussion which took place last week at the meeting of the Kingstown urban council would seem to indicate a strange degree of neglect on the part of responsible officials with regard to the milk-supply. Mr. R. N. Potterton (solicitor) stated that by the returns furnished by the sanitary inspector to the Board of Agriculture for the half-year ending June 30th, 1908, it appeared that 35 samples of milk had been taken, that in five of these there was adulteration, and that no proceedings whatever had been taken with reference to any one of them. On Sept. 10th the department wrote asking for a statement of the ground for not prosecuting in those cases, and "the reply to that inquiry which was sent to the department by the direction and with the approval of the committee seemed to him to be a shocking attempt to explain away the gross indifference to the interest of the community on the part of the majority who refused to direct prosecutions, and it bore the most conclusive evidence that proceedings ought to have been taken in every case." Sample No. 1 was said to have been taken from an old trader who was highly respected and "had a good reputation in this matter." Samples 2 and 3 were accounted for by badness of the weather, and the affirmation that there had been no addition of water. The remaining two samples were salved by the statement that "the committee felt satisfied that the adulteration was the result of an accident"! And since the date above referred to two other cases had arisen. In one Sir Charles Cameron had certified adulteration with (at least) 19 per cent. of added water and deprivation of 26 per cent. of its fats. In the second 10 per cent. of added water was certified. In these two cases summonses were ordered, only by the casting vote of the chairman. But at a subsequent meeting that order was rescinded. It was thus no wonder that infant mortality was so high among the poor. There was a vigorous discussion, and it was stated that some of the specimens analysed had been procured under somewhat irregular conditions. Towards the close Mr. Potterton proposed:—

That the council directs the public health committee in all cases in which the analyst certifies that milk sold in the district has been adulterated by additions thereto or abstraction of fats, to make orders for the prosecution of the vendor thereof.

This motion was carried by 8 votes to 4.

The Water-Supply of Belfast.

The Lisburn urban council, under the charge of which the Stoneyford catchment area (one of the water-supplies for Belfast) is placed, and the Water Commissioners of Belfast are in disagreement about an alleged pollution at Stoneyford. It would appear that on a farm in this catchment area the dwelling-house is situated on a hillock, with declivities on each side, and that there are small tributaries flowing round the base of the hillock which find their exit in the reservoir supplying part of Belfast. This results, it is alleged, in a pollution of the water-supply. For the Water Commissioners Dr. R. Alexander, the local medical officer of health, recommends the removal of a manure pit behind the byre to another position, but as that position is above the level of the stream Dr. M. B. Mackenzie, consulting medical officer for the Lisburn urban council, contends that with heavy rains the sewage matter would percolate the soil and find its way into the pure stream. The Water Commissioners call upon the Lisburn rural council to carry out Dr. Alexander's suggestion, but the council replies that this would be of no use and it demands that the Water Commissioners should buy out the farm on which the house is placed, destroy the buildings, and use the farm for grazing. Finally, at a meeting of the Lisburn rural council held on Oct. 14th a motion was unanimously carried requesting the Local Government Board to hold a sworn inquiry into the pollution of drinking water in the Lisburn rural district. This long-standing dispute would have been settled if, as the Health Commission advised, the whole of the water-supply of Belfast were in the hands of the city council and its medical officer of health had supreme control of the public health of all the catchment areas.

Tuberculosis in Ireland.

A Yellow-book dealing with "Tuberculosis in Ireland" has just been issued by the Local Government Board, in which, after carefully weighing the evidence and leaving the effect of emigration as an unknown, or at least an undetermined, quantity, it is concluded that with regard to malnutrition, bad housing, and insanitation, they have probably all had their effect in reducing the resisting power of the people, but as these and all the other circumstances of poverty existed in an even more pronounced form long before the increase in the death-rate from tuberculosis it cannot be considered certain that they are the determining cause of the excessive death-rate from tuberculosis. These factors have helped to prepare the ground for the reception of the seed and so tilled and cultivated it that it was ready for the sowing which has yielded such a lethal crop in Ireland. It is pointed out that among the strong traits of the Irish people is their desire to die in their own homes and their dislike to the only form of institution available—namely, the workhouse infirmaries; while at the same time coupled with this is the system of Poor-law relief which brings medical assistance to their homes instead of bringing the sick to the infirmaries. Again, the enormous increase of out-door relief in Ireland has also had the effect of maintaining the poor at home. All these peculiarities of the situation in Ireland, the report concludes, have favoured the spread of the disease by means of infection. By isolating typhus fever, coupled with improved sanitation, that disease has been conquered, and by similar means other zymotic diseases have been largely reduced in Ireland, until now in Ireland there is the lowest zymotic death-rate in the three kingdoms. Tuberculosis has not been treated institutionally in Ireland. Consumptive patients are retained for a shorter time in Irish workhouse infirmaries than is the practice in England and they go home in the most infectious stage of the disease to die, so that the whole evidence favours the theory of infection. It is interesting to note that the Local Government Board officials now accept the views which were put forward originally by Dr. A. Newsholme in his report to the International Congress on Tuberculosis at Paris in 1905 on "A Study of the Relation between the Treatment of Tuberculous Patients in General Institutions and the Reduction of the Death-rate from Tuberculosis," and which were first publicly accepted in Ireland as the real explanation of the situation by Sir John Byers at a meeting in Belfast on March 21st, 1906 and strongly supported by him in a lecture on "Why is Tuberculosis so Common in Ireland?" which was published in THE LANCET of Jan. 25th, 1908.

Death of Mr. John Clarke, M.R.C.S. Eng.

The oldest medical practitioner in Belfast, Mr. John Clarke, M.R.C.S. Eng., died on Oct. 25th, at his residence in Belfast, aged 92 years. A native of Newtownards, Mr. Clarke studied in Belfast and Edinburgh, and after becoming a Member of the Royal College of Surgeons of England he started practice in Belfast about 70 years ago. Many years ago he was a dispensary medical officer in Belfast when two epidemics of cholera occurred in the city. A medical officer of several friendly societies, Mr. Clarke had a good general practice. He leaves two daughters and two sons.

Oct. 27th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Death of M. Paul Berger.

M. Paul Berger, the eminent French surgeon, who died on Oct. 17th, was born in Beaucourt in 1845. He became an interne of the hospitals 21 years later and a Doctor of Medicine in 1873. He was engaged for several years in the practice of medicine and then turned his attention to surgery. In 1875 the Faculty of Medicine made him

an *agrégé* and two years later surgeon to the hospitals. At that period he held a series of classes for candidates for *agrégation* and at the Central Bureau, classes of such remarkable excellence that they will never be forgotten by those who were fortunate enough to attend them. During the past 30 years he has published a large number of scientific works. His name will remain inseparably connected with our knowledge of hernia, for he perfected the operative treatment of that disease and wrote a standard treatise upon it. He took a great share in improving the treatment of fractures and dislocations. He was a member of the Academy of Medicine, a professor of the Faculty, and a consulting surgeon, and was beloved and honoured by all who knew him. He was seized with apoplexy whilst performing an operation at the hospital; he was carefully tended but died in the hospital six days later without having regained consciousness. The chief mourners at the funeral were Professor Berger's brothers and Professor Landouzy, Dean of the Faculty of Medicine. Many eulogies were spoken in the presence of a large and deeply sympathetic gathering.

A Mutual Benefit Society of French Medical Practitioners.

A mutual benefit society (*Association Confraternelle*) of French medical men has been founded recently for the help of widows and orphans of its members and of others dependent upon them for support. The objects of the society are purely medical and philanthropic. When one of its members dies each surviving member pays in a sum of 10 francs, and the whole of these moneys, without expenses or deductions of any kind, is given to the deceased practitioner's nominee or to those dependent upon him for support. This assistance is not of a charitable nature but becomes the right of the beneficiary without expenses, taxes, or any legal formalities. An official of the society visits the house of the widow or orphans and takes with him the sum thus collected. A similar society of pharmaceutical chemists founded in Seine-et-Oise has dispensed in this manner 700,600 francs in eight years. It is to be hoped that this new society will meet with success.

The Importation and Sale of Opium.

An important Order to regulate the sale, purchase, and employment of opium and its derivatives has been published recently in the Official Journal. It lays down that importers of opium, be it in the raw state or in its officinal forms, shall be obliged to obtain from the customs house at the intended place of import a permit, which must be again presented within the space of three months supported by a certificate given by the municipal authorities of the place where the consignee resides authorising the clearance of the opium. The importer must keep a register used exclusively to record sales of opium. No amount of the drug may be sold either by an importer of foreign opium or a producer of the native drug, except to wholesale merchants and drug houses or to manufacturing or pharmaceutical chemists for the treatment of disease; further, the responsibility of the vendor is not discharged until such time as the buyer shall have notified to him that he has made the statutory declaration required when dealing in poisonous substances, and until the buyer shall have sent him a written and signed order, and, further, until the vendor shall have entered the transaction upon his register and affixed the order thereto. Should the order be given in view of an expedition abroad the drug may be taken out of France with the authority of the Customs officials. The buyer, equally with the importer, is obliged to enter his transactions in a special opium register. Raw opium supplied to a pharmaceutical chemist for making officinal preparations or alkaloids may not be sold again in the raw state by the chemist, and the preparations aforesaid can only be sold by him for medical purposes. Apart from these purposes he is forbidden to supply the drug, gratuitously or otherwise, to any persons other than those specially designated or to supply it to these persons for any other uses than those specified. It is further forbidden to employ any premises for the illegal storage or consumption of opium. The other clauses of the Order have reference to the responsibility that rests with persons who store opium in exercising proper vigilance over it; to the keeping of registers regarding its sale, purchase, or employment; and to the visits to be paid by inspectors, mayors, and commissaries to stores, shops, and laboratories.

The Teaching of Hygiene.

On Oct. 13th M. Fernand Widal read before the Academy of Medicine a note which is intended to form an appendix to the annual report upon epidemics, which he read before the holidays. It urges the advisability of introducing the rudimentary principles of hygiene into the teaching and examining syllabus of all grades from the primary school to the college. M. Henri Monod strongly supported M. Widal's proposals. The work of sanitarians, whose responsibility is now so heavy, would be enormously lightened if it did not meet at every turn with stereotyped popular prejudices which can only be corrected by the diffusion of sanitary knowledge. M. Chantemesse followed by deploring the inadequacy of the official teaching in this subject, even in the Faculties. It has hitherto been exclusively theoretical and must be modified radically to meet actual requirements. A series of practical demonstrations to the students, given in laboratories, factories, and workshops, and even in the ports, is needed nowadays if the teaching is not to be mere dry verbiage. Such practical instruction is given in other countries, whilst in Paris the facilities for teaching hygiene have not been improved for the last 20 years, a matter in which reform is urgently needed.

The Oxygen Treatment of Puerperal Infections.

In M. Reynier's wards at the Lariboisière Hospital women suffering from puerperal infections are especially admitted. When they first come in they are isolated and disinfected and then admitted into the common ward. M. Reynier has treated 530 cases, of whom two-thirds had aborted and the others had been naturally confined either in their own houses or in those of midwives. There are several varieties and manifestations of puerperal infection. M. Reynier directs his treatment only against the forms due to anaerobic bacilli and especially those of the diphtheritic type. It is common knowledge how intractable such cases prove to treatment and how susceptible to injury is the condition of the uterus in them. M. Reynier has nevertheless obtained good results with oxygen brought into contact with the interior of the uterus by means of a double-channeled sound, one side of which is connected with a cylinder of the gas. Under this treatment the general and local conditions have never failed to improve rapidly. M. Reynier communicated the method to the Academy of Medicine on Oct. 13th.

Diphtheria Statistics from the Hérold Hospital.

At the Hospitals Medical Society on Oct. 9th M. Barbier read a statistical summary of the cases of diphtheria treated during the last four years at the Hérold Hospital. There were 890 cases with 99 deaths—a mortality of 11 per cent. The death-rate had diminished progressively, not because the disease had assumed a milder type, but because of the greater frequency with which early injections of antidiphtheritic serum were employed. The severe cases were those which came under treatment late, as was proved by family epidemics of diphtheria, in which the first cases were the worst because they did not receive such early treatment as the later ones. M. Barbier pointed out that in the case of children who had had diphtheria and who had contracted subsequently measles or scarlet fever, it was advisable to give a fresh injection of antidiphtheritic serum, as recurrences and re-infections were seen quite commonly. Out of a hundred deaths amongst children who had had diphtheria, he found that five or six were due to acute miliary tuberculosis.

Oct. 27th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Italian Association for the Advancement of Science.

"SUCCESS all along the line" is the unanimous judgment pronounced at this meeting of Italian *savants* which has just closed at Florence. All the sections were the scene of animated and effective discussion on the subjects handled in each; those set apart for the biological, anthropological, and hygienic communications being especially well organised as to their agenda papers and their *personnel*. Physiology and pharmacology, as well as zoology and anatomy, human and comparative, with bacteriology, and hygiene, had each a prominence in the programme which proved of great interest to those of the "Congressisti" whose profession or whose studies were medical—an interest which will be

diffused and prolonged far beyond the scene of the Association when the reports, revised and officially issued in the form of "Atti" or "Transazioni," shall have been made *publici juris*. For the present I have but to add that the place of meeting for the Association next autumn will be Padua—the great Venetian seat of learning which will have special attraction for medical men from the British Isles as the school at which so many of their compatriots studied and qualified—compatriots whose name in the sixteenth and seventeenth centuries was Legion and among whom towered—

"Quantum lenta solent inter viburna cupressi"—

the discoverer of the circulation, William Harvey.

Evangelista Torricelli.

From the sittings of the Association many of the "Congressisti" proceeded by special train from Florence to Faenza, there to assist at the third centenary of the birth of the great mathematician, physicist, and practical mechanician, the inventor of the barometer, Evangelista Torricelli. In previous correspondence I have traced in outline the life-work of this consummate man of science, on whom the mantle of Galileo had so worthily fallen, so I may hold myself absolved from dwelling once more on the "momenta" of a career so honourable to its hero, so fraught with benefit to humanity. The celebration itself was brought to a close with all the picturesque and moving effect characteristic of such occasions in Italy, where climate coöperates with external surroundings, and both of these with oratorical fervour and skill to insure success. A preliminary promenade through the hall of the "Esposizione Torricelliana" and a visit to the local picture gallery—the Pinacoteca Comunale—prepared the "Congressisti" for the event of the day, the discourse of Professor Angelo Battelli who holds the chair of experimental physics in the University of Pisa. Fortified by sympathetic dispatches or communications from seats of learning in all parts of the world, from the University of London to that of Moscow, from, in fact, the chief European to the leading transatlantic schools, Professor Battelli portrayed in glowing colours and with the few strokes of an artist the first meeting of the young Torricelli with the old Galileo, by this time blind and infirm, and the affection that was at once established between them. Short was their intercourse, broken by the death of the aged master, but long enough to insure for the youthful disciple the cordial patronage of the former which fructified in his promotion to the chair of mathematics in Florence and in the favour bestowed on him by the Grand-ducal court. Then followed a rapid but admirably clear and cogent review of Torricelli's contributions to science, with reference to his pioneers and to his successors in the same path, a review replete with lessons as to the interdependence of the sciences and as to the futility of claims to "priority" and "originality," so often advanced by the Dii Minorum Gentium of inductive research. Then came the peroration: "Citizens of Faenza! You could have found no worthier method of honouring the third centenary of Torricelli's birth than that of projecting a full edition of his works, published and unpublished, intrusting it to the hands of an able fellow-townsman, and thereby gratifying the wish so often expressed by the nature student and the man of science. You have thus rendered to the *manes* of the master the tribute most grateful to himself, foreseeing as he did in the complete publication of his writings a vindication of his life-work and the founding of a coign of vantage from which to achieve further conquests in the interests of mankind." Votes of thanks to the orator succeeded the prolonged cheering amid which he resumed his seat, and the vast assembly broke up to meet again at a reunion given by the Municipio and at the inevitable banquet which closes all such celebrations.

Oct. 26th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Sporadic Cases of Bubonic Plague.

IN Trieste, the main port of Austria, two cases of bubonic plague were discovered a short time ago on board a vessel unloading a cargo of coffee from the East Indies. The stringent measures adopted to prevent an outbreak proved efficacious. In this case, as in similar sporadic cases, rats inhabiting the ship were proved, by microscopic and bacteriological examinations, to be the carriers of the disease. Both patients (sailors) succumbed to the disease and no fresh case has occurred since then. As a precaution part of the cargo was destroyed, the rest being thoroughly disinfected. The further destination of the shipped goods is being kept under observation.

Unveiling of a Bust of Professor von Krafft-Ebing.

During the Congress on the Care of the Insane a bust of the late Professor von Krafft-Ebing was unveiled in the presence of the members of his family, the Senate of the University of Vienna, representatives of several neurological societies, and a deputation from the Congress. The bust has been erected by the subscriptions of friends, pupils, and former patients of the celebrated physician, the Vienna Neurological Society contributing a large sum. Professor von Krafft-Ebing was born in 1840 and he was the first man on the continent to point out the necessity of scientific care for the insane, and when he was appointed to the chair of psychiatrics in the Vienna University Hospital (1889), which he held until his retirement in 1902, he made the Vienna Clinic a school of modern psychology. His works on forensic psychology, on correlations between psychopathology and sexual pathology, and his well-known essays on moral insanity have been translated into several languages. The bust has been placed in the "Aula" of the University, a spacious promenade corridor which is the repository of numerous busts and monuments of eminent professors of all the faculties.

The Opening of the New Clinic of Professor Schauta.

At last various obstacles in the shape of "red tape" and prejudice have been overcome and a few days ago the new clinic was formally opened by Professor Schauta who will be in charge of it. He delivered the opening address before a large gathering of students in the presence of the whole medical faculty and many representatives of the Government and municipality. After rehearsing the reasons which led to the foundation of the new institute, the speaker paid a tribute to the memory of Dr. Semmelweis who in 1847 discovered the etiology of puerperal sepsis without any knowledge of bacteriology. Long before Lord Lister's first publication of his immortal experiments on antisepsis Dr. Semmelweis, assistant at the gynæcologic-obstetric school in Vienna, had brought down the death-rate in the obstetric wards from the appalling figure of from 16 to 20 per cent., at which it had stood for a few years, to 1 per cent. and less, by simply ordering that no medical man or student should examine a pregnant woman or attend a labour without first scrupulously cleansing his hands by washing. He had observed that the rise in the mortality had coincided with the institution of the study of anatomy, and concluded that the students were the infective agents. Consequently he stopped students from attending the labour wards if they had anything to do with dead bodies. Dr. Semmelweis did not succeed in convincing his *confrères* of the correctness of his ideas, but his discovery and achievement are nevertheless most important, and Professor Schauta and Professor Chrobak have only paid due honour to Dr. Semmelweis in insisting upon the erection of a monument to him on the new premises. After his address was finished Professor Schauta unveiled the monument and then the company inspected the magnificent modern clinic with great satisfaction. On the same day Professor von Rosthorn, who has taken over the charge of the second new clinic, gave an inaugural address on the Significance of Pain in Gynæcology.

Juvenile Workers in Austria.

It is very dissatisfying in an age which has been styled the "child's era" to find that no less than 6000 out of 18,000 school children (in one district only) are employed in regular work for which they are not fit, figures which rest on the authority of the statistical department of the Ministry of Commerce and which accordingly may be considered correct. The majority of the juvenile workers in question are employed in agricultural duties; even children between five and seven years of age are employed in the fields, and boys or girls between 12 and 14 years are often hired out. Examination of such children proved that their development suffered from the amount of work entailed upon them: retardation of growth, disorders of the heart, nervousness from insufficient sleep, and general debility from inadequate

nourishment were met with especially often. The effect of an open-air life was more than counterbalanced by these unfavourable factors. These children readily acquire a taste for alcohol as their grown-up workmates let them partake of their drink. The poor condition of the peasant population in some parts of the Empire causes also a high infant mortality, and the physical deterioration prevalent in these districts is well known to the recruiting officers of the army. General indignation has been roused by the publication of this report, and a committee has been formed to inquire into the conditions and to suggest remedial measures. No hope seems to lie in legislation alone, as the poverty of a large percentage of the rural population is an almost insurmountable obstacle.

A Hospital Boycott.

A radical measure has been taken by the Association of Young Austrian Practitioners in consequence of the persistent neglect of the just demands of the medical staff of one of the Vienna hospitals. Economy had been practised in this hospital chiefly at the expense of the medical officers to such a degree that the food supplied to them became too bad and insufficient for their needs. They were also expected to do the administrative work in spite of the enormous range of their professional duties. Several complaints were made to the managing board and the superintending officer of the Government but met with no result whatever. Three months ago the staff delivered an ultimatum demanding that their wishes should be complied with by Oct. 23rd. As this met with no response the whole staff sent in their resignations and the association proclaimed a boycott against the hospital, so that now the board has to manage as best it can with only one medical man, the director, at its disposal. Several cases of illness occurring among the physicians were traced to the hospital food and finally decided them on their action. It must be added, however, that the disgraceful conditions in this hospital do not reflect in any way upon the management of the other Vienna institutions; the case is an exceptional one and is caused by exceptional officials who are cheeseparing in their zeal for economy.

Increase of Venereal Affections.

The experience of general practitioners, as was remarked at one of the recent meetings of the Medical Society in Vienna, tends to prove that affections of the sexual organs have been increasing progressively during about the last 25 years. This is especially the case amongst factory labourers who suffer now to the extent of some 16 per 1000. About 33 per 1000 amongst artisans and auxiliary hands are affected. The proportion is also remarkably high amongst cabdrivers, farriers, hairdressers, bakers, and printers. Some of these occupations render persons so affected dangerous to the public, therefore the Bureau of the Inspector of Labour has been made aware of the prevailing conditions in order to enforce stricter supervision of persons liable to become carriers of infection.

Oct. 24th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

The Annual Report of the Budapest Hospitals.

OF the hospitals lying on the left side of the Danube the St. Rochus Hospital, the old and new workhouse hospital, and the St. Ladislaus Hospital have between them 1381 beds. The St. Stephen Hospital alone can accommodate 1062 patients. The number of nurses, both male and female, amounts to 184. 60 assistant medical officers are employed. The annual report for 1907 gives the following statistics of patients. At the beginning of the year there were 2243 in-patients and during the year 33,741 were admitted. Of these patients 50·27 per cent. were dismissed cured, 33·38 per cent. were dismissed improved, 2·10 per cent. were dismissed uncured, 7·73 per cent. died, and 6·52 per cent. remained for 1908. The number of attendances amounted to 847,921 and thus each patient was attended on an average on 23·56 days. Of individual diseases 1053 cases of tuberculosis were attended with a mortality of 847. There were 2934 venereal cases, including gonorrhœa 1762, and soft chancre 1172. The number of syphilitic cases amounted to 2080. The great number of infective cases was disquieting. There were 2959 acute infective cases of which 757 were scarlet fever, with 407 deaths. The cases of acute poisoning which were admitted may be summarised as follows:—

1.	Poisoning with	caustic soda	54	males,	163	females.
2.	,, ,,	alcohol	61	,,	24	,,
3.	,, ,,	hydrochloric acid	5	,,	2	,,
4.	,, ,,	sulphuric acid	1	,,	—	,,
5.	,, ,,	chromic acid	2	,,	—	,,
6.	,, ,,	acetic acid	2	,,	4	,,
7.	,, ,,	arsenic	1	,,	1	,,
8.	,, ,,	quicksilver	2	,,	18	,,
9.	,, ,,	copper	1	,,	—	,,
10.	,, ,,	permanganate of potash	1	,,	—	,,
11.	,, ,,	morphine	3	,,	3	,,
12.	,, ,,	atropine	2	,,	—	,,
13.	,, ,,	decomposed meat	1	,,	—	,,
14.	,, ,,	carbon monoxide	2	,,	9	,,
15.	,, ,,	ammonia	1	,,	—	,,
16.	,, ,,	camphor	2	,,	—	,,
17.	,, ,,	carbolic acid	2	,,	—	,,
18.	,, ,,	atropa belladonna	—	,,	1	,,
19.	,, ,,	bromidin	—	,,	1	,,
20.	,, ,,	copper sulphate	—	,,	2	,,
21.	,, ,,	phosphorus (matches)	—	,,	9	,,
22.	,, ,,	strychnine	—	,,	1	,,
23.	,, ,,	chloroform	1	,,	—	,,
24.	,, ,,	veronal	—	,,	1	,,

A careful investigation of these data shows at once that different poisons are chosen according to the sex. While women prefer caustic soda, phosphorus (matches), and carbon monoxide, men turn first to alcohol. Professor Pertik's report on 954 post-mortem examinations is most interesting from a scientific point of view. These included 80 cases of malignant tumours, 55 of tuberculosis, 49 of chronic heart diseases, 47 of septic ailments, 35 of croupous pneumonia, 32 of chronic nephritis, 23 of peritonitis, 22 of apoplexy, and finally, 21 of arterio-sclerosis. Of the malignant tumours 67 were carcinoma and 13 sarcoma. Of the 67 cases of cancer 32 were in males and 35 in females. Professor Pertik states that of the 67 cases of cancer in 36 only simple primary foci were found. It is noteworthy that out of 79 cases of tumour visceral tuberculosis only occurred in four and in these the lesions were healed or improved, although tuberculosis occurs in 11·2 per cent. of all the cases observed. It is also surprising to note that, although cancer occurs chiefly in subjects of advanced years, in a very small number of such cases has arterio-sclerosis been observed. This fact seems to strengthen the view that the growth of a tumour presupposes a good arterial system. The section of the report dealing with tuberculosis proves that there is no stage of human life exempt from the ravages of the disease. There is a particularly interesting description of the septic affections. This includes the following post-mortem diagnosis in a young subject aged 27 years: "Urethritis purulenta, partim diphteritica ex irritatione chemicali (Zn_2SO_4) orta. Abscessus paraurethralis et periurethralis. Abscessus metastaticus myocardii cum propagatione ad endocardium veli valvulæ bicuspidalis et exulceratione eiusdem."

A New Industrial Disease.

Two years ago an artificial "silk" factory was erected in Hungary. The "silk" is made of cellulose. In the process of manufacture carbon disulphide is freely used, and the vapour, being heavier than air, accumulates in the lower parts of the workroom. The inhaling of this gas causes various symptoms which at first puzzled the factory surgeons. Only later when symptoms pointing to the central nervous system became prominent did the surgeons get on the right track and diagnose the gas intoxication. The first symptoms of the intoxication are headache and general malaise. These prodromal symptoms vary not only in intensity but also in duration. The headache is generally severe and continuous. The patients complain of fainting and their gait becomes ataxic. At the same time also gastric symptoms occur, such as loss of appetite, retching, and sometimes anorexia. Later if the workman continues in his employment in spite of these symptoms general prostration and weakness of the limbs set in. The surgeons also noted the lack of mental attention of the sick workmen, who walk aimlessly about the factory. They also complain of impaired sight. These visual disturbances

gradually increase until the patients can scarcely stand. Sometimes they collapse; in many cases they are carried home unconscious, and this comatose state lasts for even two or three weeks in some of the patients. In others delirium and maniacal conditions supervene during which they became very aggressive and violent. Their speech becomes indistinct. In this condition every therapeutical measure seems to be useless. Convalescence is very slow. The fainting attacks continue for a long time, especially when standing up. Many patients complain of swelling of the tongue and viscosity of their saliva. The prognosis, however, is favourable if the work is abandoned. Only in one case has permanent dementia been observed after intoxication with CS_2. No disturbances of the peripheral nerves or of the vaso-motor system have been observed. As for treatment, the chief duty of the factory surgeon is to insist on the strictest prophylaxis. The chief measure to take is careful ventilation in the rooms where carbon disulphide is used. These should be furnished with large electric fans. No man should work in such a room for more than eight days in succession.

Oct. 17th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The New Régime and Medical Matters.

AMONG many other good things which the recent political changes have brought about in the Ottoman Empire is the creation of public opinion. Until the proclamation of the Constitution none dared to express openly his view on matters of social or governmental concern or interest and, still less, to give utterance to grievance or dissatisfaction of any kind. As to the daily and weekly press, it never dreamed of lending a helping hand for fear of immediate confiscation. Matters are at present quite different, and views and questionings on high political, social, religious, and medical importance are being openly discussed in the press and otherwise. That the state of public health, matters of hygiene and sanitation, and the general progress of medical science will greatly profit by such a favourable turn of events cannot be doubted. There are, however, so many matters to alter that it will require a long time to see any appreciable actual progress. One of the most important matters which the medical authorities in the new *régime* will have seriously to consider is the permission to lady doctors to practise in the Ottoman Empire. Up to now no woman had any right to engage in medical work, and the few female practitioners who from time to time came and settled for a while in Turkey had no legal status. They were tolerated with feelings of mistrust and in due course sent away. Thus Dr. Marie Siebold, an exceptionally gifted graduate of the University of Berne, who had decorations from the Russian and Servian Governments and who had been for a time the superintendent of a hospital in Belgrade, settled in Constantinople about 23 years ago. She began her practice here under enormous difficulties. She asked to be admitted to the so-called "colloquium" examination but received an energetic refusal. In high Turkish quarters the great need of a lady practitioner for the female Mussulman population was, however, fully recognised, and as Dr. Marie Siebold soon distinguished herself as a very skilful practitioner she was allowed to continue her medical activity for about 20 years. She did splendid work. But her standing was not legal according to Turkish law and at last she had to leave the country, to the great regret of many. Under the present new development of affairs in Turkey it seems that a lady practitioner would have a splendid opening. I am assured by a well-informed person that it would be an easy matter now to get the competent authorities to sanction a law which would secure to female medical practitioners a legal status on perfectly equal terms with medical men.

Starvation and Disease.

Distressing news of starvation and disease comes from some provinces in the interior of Turkey. I translate the following from a telegram received the other day at the Armenian Patriarchate of Koum-Kapou in Stamboul:—

In some places of the vilayets of Van, Bitlis, and Mush etc., the harvest has been so poor that the population there begins now to suffer from starvation. Large crowds flock from villages to the towns begging for bread. Some women and girls committed suicide in order to escape the tortures of a slow death from hunger. Many live on mere vegetables, some of which are of a poisonous nature, with the result that large numbers are ill and that infectious diseases are rapidly spreading. The Turks of Divris have sent a telegram to the Sublime Porte asking for immediate help.

A Significant Sign of the Times.

The local newspapers reproduce the following telegram sent by the Paris International Medical Association to the Bulgarian Council of Ministers. This reproduction would have been, of course, an utter impossibility under the former *régime*:—

The International Medical Association, in order to help the abolition of war, directs the attention of your Government to the example given by the Young Turks, and to the fact that war is a barbarous procedure. International conflicts should be settled by the International Tribunal. —The President, Dr. J. A. RIVIÈRE.

An Interesting Archæological Discovery.

In the neighbourhood of the village Iglitza in Roumania there has been discovered lately the tombstone of the Roman physician Titus Rascanius. Archæological researches have resulted in the establishment of the fact that on the site of the village Iglitza there stood in Roman times the ancient fortress Troesmis and that here the above-mentioned physician, who had come with the Roman legions, was buried. This discovery is so far of importance as it is the only trace of a Roman physician that has been, up to now, found in the whole of Roumania. The Director-General of the Sanitary Council of Bucharest has proposed that the hospital of Macin, which is near the place of the discovery, should henceforward bear the name of "Hospital Titus Rascanius."

Oct. 23rd.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Annual Meeting of the American Hospital Association.

THE American Hospital Association met in tenth annual session in Toronto during the week ending Oct. 3rd. About 130 delegates registered, but a large number of visitors were also present. The delegates were welcomed to Toronto by Acting-Mayor Controller Dr. W. S. Harrison who suggested that a similar association should be formed in every state and province, and that these associations should send representatives to the general association. Dr. S. S. Goldwater, of Mount Sinai Hospital, New York, the President of the Association, in his annual presidential address said that the Association had assumed unprecedented proportions in a single year. The factors which determined the usefulness of such an organisation were the number and character of its members, the thoroughness and comprehensiveness of its investigations, the effectiveness of its publications, and its success in developing an enlightened public opinion in regard to hospital affairs. The Association gave to each of its members an opportunity for contact with the guiding minds of some 400 institutions, and its future should be planned along lines calculated to turn the light of public discussion upon every condition which affected, or is capable of affecting, the welfare of the institutions represented. The membership should include not only trustees and superintendents but also physicians and surgeons. He considered that the organisation might be modified to provide for a central body and a series of working sections, each with its proper officers. Thus there would be a section on general administration, on medical administration, and on external administration. To deal with questions of policy there should be a central council representing the various sections. The problem of training nurses was taken up and discussed fully, particularly the requirements and the course of training which they should have to undergo. Dr. Kavanagh presented the following motion which was subsequently acted upon:—

That a committee be appointed consisting of seven members of this organisation, two nurses, two physicians, two laymen, and the president, whose duty it shall be to seek information from leading physicians, surgeons, nurses, training school committees, and other sources, bearing upon the curriculum and length of the course of training of our nurses; to consider to what extent hospitals should undertake to prepare a class of hospital nurses or assistants, and to report upon the advisability of coöperating with such associations as the Young Women's Christian Association in the work; to present a model curriculum containing only such subjects as they think necessary for the proper training of

a regular nurse or a nurse-helper, and to report at the next annual meeting of the association.

At present some of the hospitals of the United States have a shorter course and a lower standard of training than others, principally in New York. "A Layman's View of Hospital Work" was the subject of an interesting paper read by Mr. John Ross Robertson, chairman of the trustees of the Hospital for Sick Children, Toronto. In the course of his address Mr. Robertson said that during the past 30 years hundreds of thousands of dollars have been received from voluntary contributions by the Hospital for Sick Children. A general impression prevails that the money for the support of the hospital comes from the pockets of the wealthy. An intimate knowledge of the sources which sustain their work shows that they receive the dimes of the many rather than the donations of the few. Of course, there are noble and notable exceptions, one at least in their history aided them with a contribution of $10,000, the largest which the hospital ever received. A paper entitled "The Visiting Committee as an Aid to the Safe Conduct of Public Hospitals," written by Mrs. George Stephenson Bixby of New York, was read by Mr. B. B. Burritt, secretary of the New York Hospital Visiting Committee. It testified to the value of the work undertaken by the committee. Early in the proceedings of the meeting the membership committee reported that 238 applications, of which 65 were from trustees and members of hospital boards, had been received during the year. The State of New York headed the list with 65 applications. Canada was credited with 25. The membership is now about 500. It was shown that the association had materially widened its field of operation and the growth is so remarkable that present indications were that in a few years hence it will dominate the entire hospital world of America. The treasurer's report was very satisfactory. Dr. John A. Hornsby of the Michael Reese Hospital, Chicago, read an instructive paper on Some Scientific Aspects of Hospital Management. In introducing Miss M. U. Watson, directress of the Home Economic Department of the Macdonald Institute, Guelph, Ontario, Dr. Goldwater, the chairman, said that the interest and stimulation of the proceedings had been enhanced by a number of guests who voluntarily offered to give papers on various subjects of the utmost importance to the delegates. Miss Watson gave an interesting talk on "Trained Housekeepers" in which she entered a strong plea for the systematic instruction of housekeepers in food values and hygiene and business methods. The work in connexion with children's dispensaries, the dispensary work in tuberculosis clinics, the restriction of the abuse of the out-patient department, and the planning and construction of the ideal hospital were some of the other interesting subjects taken up and fully discussed. Several papers treating on the subject of tuberculosis in all its phases were read. Dr. James Alex. Miller, President of the Association of Tuberculosis Clinics, New York, spoke on the coöperation in dispensary work as exemplified by the Association of Tuberculosis Clinics of New York. He dealt almost exclusively with the phase relative to educating people in the home as to the dangers of tuberculosis and its treatment. This was followed by the introduction of the subject of the Development of the Work and Restriction of the Abuse of the Out-patient Department, the different phases of which were expounded by Dr. John M. Peters of Rhode Island Hospital, Providence, R.I., and Mr. John Ross Robertson of Toronto. Dr. Donald J. Mackintosh of the Western Infirmary, Glasgow, in speaking on the planning and construction of hospitals, smaller cities, and towns, said that he had gleaned valuable information in America, but he had yet to find a perfect hospital, although he had been in the United States. He was subsequently elected an honorary member of the association. Before an audience of over 200 medical men and superintendents of hospitals at the annual banquet of the Association Dr. D. C. Potter, chief of the Charitable Institution Division, Department of Finance, New York City, said some very scathing things about grafters and hospital reformers. This was in the course of an address on the subject of the Private Hospital as a Municipal Agent. Dr. Potter's experience in New York is such that he has little faith in the average reformer. This class of individual is always on hand to turn the grafter out and get the job for himself. He paid a high tribute to Canadian nurses. In referring to the cost of maintaining patients in private and municipal institutions, in comparison, he said that while in the private institution it cost from 80 cents to $1.10 per patient per diem, in the municipal hospital the cost ranged from $1.92 to $10.20 per diem. In discussing the question of the control of infectious and contagious diseases Mr. John Ross Robertson (Toronto) stated that at the Hospital for Sick Children since 1892 it had cost that institution from $15,000 to $20,000 through infection brought into the institution by people visiting patients. Several of the delegates stated that they had had similar experiences in their respective institutions. Mr. Ross Robertson was unanimously tendered the presidency but declined the honour. The officers elected were: President, Dr. John M. Peters, Rhode Island Hospital, Providence, R.I.; Vice-Presidents, Dr. Arthur A. Aucker, City and County Hospital, St. Paul, Minn.; Dr. J. N. E. Brown, Toronto General Hospital; and Miss Emma Blunderson, New England Baptist Hospital, Boston; Secretary, Dr. W. L. Babcock, Grace Hospital, Detroit; and Treasurer, Dr. Asa Bacon, Presbyterian Hospital, Chicago. Washington, D.C., was selected as the place of meeting in 1909 on the following dates:—Sept. 22nd to 29th inclusive.

Immigration and Deportation of Defectives in Ontario.

From a pamphlet which has just been issued by the Legislative Assembly of the Province of Ontario there were on Dec. 31st, 1907, exclusive of insane persons in the private institution, the Homewood Sanitarium at Guelph, Ontario, 5315 insane persons and 775 idiots and feeble-minded, divided as follows: males, 2931; and females, 3159. The net increase for the year was 118. The daily average number of patients in the provincial hospitals during the year was 6053; the total number of admissions, 1162, of which number 262 were admitted to the Toronto institution; the total number of discharges during the year was 537; the total number of deaths, 413; discharged recovered, 312; discharged improved, 177; discharged unimproved, 48. By nationalities the population was as follows: Canadians, 4573; English, 544; Irish, 439; Scotch, 223; United States, 112; Germany, 71; Russia, 13; all other countries, 115. 19 persons who had become a charge on the province were deported as undesirables in 1906. During the year 1907 the work has been prosecuted with greater vigour and 87 persons have been deported, representing a saving to the province in future maintainence approximately of $350,000. Referring to the Toronto institution alone, the superintendent, Dr. C. K. Clarke, says that of the 262 persons admitted in 1907 less than half of these were Canadians, that exactly 134 were foreign-born persons.

Oct. 20th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Epidemic of Malaria.

AN extraordinary outbreak of malarial fever is reported among the staff of the North-Western Railway in the Punjab. Europeans and Indians are affected, and as the epidemic has practically spread all over the line the movement of traffic is being carried out with the greatest difficulty. At Lahore alone during the past week some 60 drivers and 2000 men from the workshops were on the sick list, and the staff elsewhere were contributing their quota. The running of certain goods trains on some sections has had to be cancelled. The railway is doing its utmost to cope with the situation and is obtaining assistance so far as possible from neighbouring lines. The epidemic is due to the exceptionally heavy rain in the Punjab during the monsoon period and it is to be feared that the general population will also suffer. The probability of this was indicated some time ago and it was suggested that quinine should be widely distributed throughout the province. Special attention will doubtless be paid to this point by the local government. The committee appointed by the government of Bombay so long ago as 1906 to inquire into the causes of malaria and other fevers and to recommend measures for the improvement of the health of the city has at last presented its report. The recommendations which it makes are, briefly, the conversion of the present intermittent water-supply into a constant one, the adoption of the water-carriage system in place of the present method for the disposal of night soil, the removal of the sewage outfall from Love Grove to a spot where the sewage may be treated before

it enters the sea, and the opening out and development of the districts known as Tardeo, Mahalukshimi, and Worli, by encouraging the expansion of the city in this direction and thus relieving the overcrowding which at present exists in certain parts of it.

Ootacamund.

Two subjects of great interest just now are the health of the station, which has been bad this season, and the drainage scheme, to which this condition of things is attributed in no small measure. Dysentery has been universally prevalent and the official inquiry on the subject, if any, has not been given to the public. With regard to the drainage scheme the municipality has held several special meetings to consider the question but apparently has not yet arrived at a decision whether it will take it over from the Department of Public Works in an unfinished state or will wait until construction has further proceeded to completion and then take it over—i.e., after it has evidence that it is a workable scheme.

Mayo Native Hospital, Calcutta.

At its last meeting the finance special committee of the Calcutta corporation was to consider a letter received from the officiating superintendent and secretary, Mayo Native Hospital, asking the corporation to assist the institution to meet the expenses incidental to a thorough overhauling of its drainage and water-supply. The letter is as follows:—

In forwarding herewith the copy of a resolution of the governors of the Mayo Native Hospital, dated the 25th May, 1908, I have the honour to request the favour of your kindly helping this charitable institution, which is chiefly dependent on subscriptions and donations, and which is too poor to meet all the expenses incidental to a thorough overhauling of its drainage and water-supply. The present drainage and water-supply date from 1874, when this building was constructed, and are now in a deplorably insanitary condition. Sundry repairs have been done from time to time as funds were available, but have proved so unsatisfactory that thorough repairs have now become urgently necessary. Messrs. J. B. Norton and Sons estimate that complete and thorough repairs will cost Rs.7624-13-6, which is quite beyond the means of the hospital. The work, however, can be taken up piecemeal, and the most important portion is done now at an estimated cost of Rs.1811-3-6. It is absolutely necessary that this should be done at once, and if the corporation can see their way to assist this institution in this matter it will be an act of grace and will be greatly appreciated.

The resolution was as follows:—

The attention of the governors having been drawn to the urgent need of improving the drainage and water-supply of the hospital and to the estimates of Messrs. Norton and Sons for doing the work, it was resolved that the Calcutta corporation be approached to defray the cost of carrying on the work.

Oct. 6th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Eighth Australasian Medical Congress.

THE arrangements for the Congress to be held in Melbourne from Oct. 17th to 24th are now almost complete and the gathering promises to be highly successful both from the scientific and the social aspect. Already 550 members have been enrolled, a number which will probably be still further augmented. The problems of syphilis will form a large feature of the discussions and are to be dealt with separately in various sections and by the Congress as a whole. The other general discussion will be on hospitals and a series of motions will be submitted which it is hoped will form a foundation upon which a reform of existing abuses may be initiated. The list of papers arranged for the various sections shows that Australian practice is well abreast of the times in modern developments of medicine and surgery. An important discussion is arranged in the surgical section on "Anæsthesia—General, Local, and Intraspinous." Opsonic work and treatment by vaccines will be fully dealt with and several papers will relate to ionic medication. An interesting paper in the section of children's diseases promises to be that by Dr. Stephens who will tabulate his observations of the recent epidemics of infantile paralysis in Melbourne and suburbs. Tropical diseases as met with in Australia will also be noticed. A well-equipped museum will be arranged. The social events include a Congress dinner given by the Victorian members to visitors; a ball given by the Victorian officers of the Australian Army Medical Corps; evening receptions by the President of the Congress, Professor H. B. Allen, and by the President of the Legislative Council, Sir H. Wrixon; and numerous garden-parties and other out-door fixtures.

Bacteriology.

An interesting return of the work done at the bacteriological laboratory of the University of Melbourne for 1907 has been published by Dr. R. J. Bull. The Board of Health subsidises the laboratory for examinations of sputum in regard to tuberculosis and for examinations in relation to enteric fever and diphtheria. Under this heading 2856 specimens were reported upon. Private practitioners supplied 3668 specimens for investigation during the same period. In addition to this clinical work the laboratory conducts routine examinations for several Government departments and public bodies. In the agricultural department the interesting discovery has been made that actinomycosis is prevalent among Victorian dairy cows as a primary disease of the udder. Purely research work has been done in actinomycosis, rat leprosy and certain diseases of fish and poultry, and in various other directions.

Extraordinary Death.

At the Melbourne Hospital a patient was admitted apparently suffering from severe and extensive burns and died shortly after admission. The burns were evidently the result of some chemical agent and the man admitted that he had painted himself with a solution of perchloride of mercury "in order to kill bugs." He had purchased two ounces of the drug from a druggist and made a solution himself, the exact strength not being known.

Consumption of Alcohol.

Canon Boyce of New South Wales has for the past 25 years worked out the annual drink bill of that State. In 1907 he finds that £5,200,000 were expended by the people of New South Wales in alcoholic drinks. This is the highest record yet attained, but on a per capita basis it is lower than in 1900 and 1901. In Victoria the consumption of beer was larger in 1907 than for many years. It has been demonstrated from figures in Australia that the drink bill fluctuates with prosperity, being higher in good seasons and lower in bad. The general indications in Australia are that the people are becoming more and more temperate. Even in the back-block towns the old orgies are becoming very rare.

Milk-supply.

The committee of the Lady Talbot Institute, which was established for the purpose of encouraging the supply of special clean milk for infants, has formulated a series of conditions for the production, handling, and storage of such milk. Dairymen who comply with these requirements will be entitled to advertise their milk as having the approval of the institute. It is proposed that medical men should be informed where such milk is obtainable and urged to use it where breast-feeding is impracticable. The board hopes shortly to formulate a bacteriological standard for special milk. Amongst the conditions are the following:—

The milk, on arrival at the cooling room, must at once be strained through an approved strainer or cleansing centrifuge, and cooled to a temperature below 45° F., and so kept until pasteurised or bottled, or otherwise prepared for delivery.

If bottled on the farm, the milk must be bottled in sterilised bottles within 15 minutes of being cooled, and, if so required, must then be pasteurised at such a temperature and for such a time as the board may approve. Immediately afterwards, or during pasteurisation, the bottles must be corked with sterilised stoppers and sealed with the seal of the institute, and must be cooled to a temperature below 40° F. within two hours of milking. It may prove practicable to extend somewhat the period within which the milk may be bottled and pasteurised, the primary requirement being that the temperature of the milk shall be maintained throughout at a temperature below 45° F. The bottled milk must be available for distribution within such time of milking as the board may fix, and must, until distributed, be kept at a temperature not exceeding 50° F. The board is prepared to consider methods of packing and distribution other than in bottles.

All persons engaged in any milk-room or place in which special supervised milk is handled must wear clean, washable overalls and caps, and must comply with any prescribed routine for insuring cleanliness of person and the protection of the milk from contamination. After milking and milk-handling operations are completed overalls must be removed, and, if soiled, must be washed and boiled; otherwise they must be well shaken and put away in a clean cupboard.

Utensils must be cleaned and sterilised, and so stored as to exclude all dust and prevent contamination. For the cleansing of utensils and appliances warm soda solution of a strength of 1 pound of washing soda to 20 gallons must be used. After thoroughly cleansing the sterilisation must be effected by means of live steam or by complete immersion in a boiling solution of soda of the above-named strength.

When directed by the supervising officer, milkers, after specially washing their hands, must milk a sample of milk direct from each quarter of the udder into sterilised bottles, which will be supplied. The bottle must be immediately corked with a sterilised rubber

stopper and placed in a mixture of salt and ice or cooled to a temperature below 40° F. and kept below that temperature until delivered to an approved bacteriologist.

A movement has also been initiated in Sydney for the establishment of pure milk depôts by the request of Miss Rawson who invited a number of medical men and others to discuss the question. The proposal was supported by Sir James Graham, Dr. C. K. M'Kellar, and Sir P. Sydney Jones. The last emphasised the importance of restricting the supply to infants who could not be breast-fed. The following resolution was adopted:—

That in the opinion of those present it is advisable to establish a system of milk depôts for the supply of pure milk for infants.

Sept. 23rd.

Obituary.

ALONZO GEORGE RIDER, M.B. LOND., L.R.C.P. LOND., M.R.C.S. ENG.,

SENIOR SURGEON, ROYAL ALBERT HOSPITAL, DEVONPORT.

Dr. Alonzo George Rider died at his residence, 16, Garfield-terrace, Stoke, Devonport, on Oct. 18th in his forty-second year. The deceased was the elder son of Mr. Alonzo Rider, J.P., of Devonport. He received his medical education at University College Hospital, London, graduating M.B. Lond. in 1891, and taking the L.R.C.P. and M.R.C.S. qualifications in the same year. After holding appointments at University College Hospital Dr. Rider commenced practice at Stoke, Devonport, in 1892, and was appointed surgeon to the Provident Dispensary in connexion with the Royal Albert Hospital. He was subsequently elected assistant surgeon to that hospital, and at the time of his death he was senior surgeon to the institution. Dr. Rider was extremely popular and highly esteemed in the "Three Towns," and was president of the Plymouth Medical Society for the current year. His death is a great loss to the local medical profession, for besides being one of the kindliest of men he was one of the most successful practitioners in Devonport and had won a high reputation for his surgical skill. Dr. Rider leaves a widow and two young children.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—E. W. Braithwaite (Sections I. and II.), Leeds; H. J. Clutterbuck, Middlesex Hospital; J. Grimoldby (Sections I. and II.), Edinburgh; H. E. Middlebrooke (Section II.), London Hospital; J. R. Perdrau (Section I.), Guy's Hospital; H. W. Phillips (Section II.), Manchester; A. D. Rees (Sections I. and II.), Charing Cross Hospital; and N. C. Wallis (Section II.), London Hospital.

Medicine.—G. K. Aubrey (Section II.), King's College Hospital; E. W. Braithwaite (Sections I. and II.), Leeds; H. A. Hancock (Section I.) and H. B. Waller (Section II.), London Hospital; and H. V. White (Sections I. and II.), Manchester.

Forensic Medicine.—E. W. Braithwaite, Leeds; and J. J. S. Rowe, Charing Cross Hospital.

Midwifery.—N. B. Benjafield, University College Hospital; and E. W. Braithwaite, Leeds.

The diploma of the Society was granted to the following candidates entitling them to practise medicine, surgery, and midwifery:—E. W. Braithwaite, H. J. Clutterbuck, J. Grimoldby, H. E. Middlebrooke, H. W. Phillips, A. D. Rees, and N. C. Wallis.

TRINITY COLLEGE, DUBLIN.—At examinations held recently the following candidates were successful:—

FINAL MEDICAL EXAMINATION.

Part I.—William R. Watson, Peter H. Lemass, Samuel R. Richardson, William P. H. Smiley, William H. Hart, Louis Trichard, and Brindley H. Moore. *Passed in Pathology:* Victor W. T. M'Gusty, and Hugh S. Metcalfe.

PRELIMINARY SCIENTIFIC EXAMINATION.

Botany and Zoology.—Henry V. FitzGerald, Edgar H. Wilkins, Edward H. H. Lloyd-Dodd, John A. MacSweeny, Richard S. G. Halpin, William Foot, Hedley Boyers, William J. Stewart, and James H. Fletcher.

Physics and Chemistry.—James H. Fletcher, Jevan H. Powell, Robert A. Flood, Arthur B. Draper, Oswald V. Burrows, William P. Croker, Francis T. G. Corscadden, Leslie J. Nugent, William J. Stewart, James N. Armstrong, Robert H. Lyons, John T. Simpson, Edwin F. O'Connor, Brian D. Crichton, and William O. Ball.

INTERMEDIATE MEDICAL EXAMINATION.

Part I.—H. Jocelyn Smyly, Matthew M'Knight, Townley G. Hardman, John W. Flood, Mary G. Caskey, George J. Meldon, Charles O'Brien, Edward H. P. Murphy, Patrick F. Nunan, and James H. Crane.

Part II.—William L. English, Reginald T. Vaughan, Townley G. Hardman, Cecil Grene, Thomas A. Watson, James H. Crane, John W. Flood, Charles D. Hanan, and William M. Johnstone.

PREVIOUS DENTAL EXAMINATION.

Materia Medica.—Arthur A. Smith.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Professor Engelmann's lectures on Physiology will be delivered by Professor René du Bois Reymond during the present session as the former is about to retire. It is intended to divide the duties of the chair of Physiology between two professors who will take Pure Physiology and Chemical Physiology respectively. Dr. Verworn, professor in Göttingen, and Dr. Kossel, professor in Heidelberg, have been offered these chairs.—*Budapest:* Dr. Dezsö Raskai has been recognised as *privat-docent* of Diseases of the Genito-Urinary System.—*Prague (German University):* A new professorship of Laryngology has been established to which Dr. L. Harmer, *privat-docent*, has been appointed.—*Vienna:* Dr. Maximilian Weinberger has been recognised as *privat-docent* of Medicine and Dr. Walter Pick as *privat-docent* of Dermatology and Syphilology.

UNIVERSITY OF CAMBRIDGE.—The following appointments have been made:—Demonstrator of Animal Morphology: Mr. R. C. Punnett, M.A., Fellow of Gonville and Caius College. Demonstrator of Comparative Anatomy: Mr. F. H. Potts, M.A., Fellow of Trinity Hall. Examiners for the First and Second M.B.:—Physics: Mr. C. T. R. Wilson, M.A., Sidney Sussex; and Mr. T. G. Bedford, M.A., Sidney Sussex. Chemistry: Mr. R. H. Adie, M.A., Trinity College; and Mr. C. T. Heycock, M.A., King's College. Biology: Mr. A. E. Shipley, M.A., Christ's College; and Professor A. C. Seward. Human anatomy: Dr. W. L. H. Duckworth, Jesus College; and Mr. C. Addison, St. Bartholomew's Hospital. Physiology: Dr. H. K. Anderson, Gonville and Caius College; and Dr. D. Noel Paton, Glasgow University. Examiners for the Third M.B., Part I.:—General pathology: Professor G. Sims Woodhead and Dr. J. Ritchie, Edinburgh. General pharmacology: Dr. W. E. Dixon, Downing College; and Professor C. R. Marshall, Downing College.—In the list of candidates who have passed the examination in Sanitary Science which appeared in our issue of Oct. 24th, p. 1261, the name of Leslie T. R. Hutchinson (Trinity) was accidentally omitted.

WEST LONDON POST-GRADUATE COLLEGE.—The opening address of the winter session of the West London Post-Graduate College was delivered on Oct. 13th by Sir Richard Douglas Powell, Bart., K.C.V.O., President of the Royal College of Physicians of London. A large audience was present. Sir Richard Douglas Powell commented on the value of the instruction which could be obtained in this post-graduate college, and, in discussing the reasons why medical men should go there to study, said that their first reason was a desire to place themselves abreast of the medicine of the day. Amongst other things, nothing was so important as to learn to appreciate the value of antiseptics and bacteriology as applied to internal medicine. He congratulated the members of the public services, such as the Royal Naval and Indian Medical, to whom study-leave was granted, and deplored the impossibility of the hard-worked general practitioner adopting this plan. He then referred to some conditions of old age, conditions which were too often regarded as diseases. He ventured to think that perhaps it was a misnomer, in spite of high authorities, to speak of old age as a disease. Of course, in a sense they might say that they were not living so much as dying all the time. A German ophthalmic surgeon was reported to have found cataract commencing in a new-born baby! He was speaking more of healthy old age than of disease as a cause of age. They were all aware of changes gradually occurring as age came on, conditions which certainly should not be regarded, and still less should they be treated, as diseases. If these conditions had not been hastened by riotous living, or by strenuous labour or hereditary disease, they should not be regarded as more than changes. After speaking of changes that occurred in old age, the speaker gave suggestions as to the mode of treatment, and said that the physician should not only know his medicine but should also learn to know his patient. With regard to drugs, strychnine should be given with very great

caution to old people, and in general milder drugs were of more value than stronger ones. Many of the ailments of old people, which were a serious cause of discomfort to them, would be regarded as trivial in younger persons and be ignored; they required treatment with a light hand and with gentle medication. On the motion of the chairman, Dr. Donald W. C. Hood, seconded by Deputy Inspector-General W. H. Norman, R.N., a hearty vote of thanks was passed to Sir Richard Douglas Powell for his address.

THE MEDICAL DEPARTMENT OF THE SIAMESE ARMY.—The Siamese military authorities propose to reorganise the medical department of the army and have offered the appointment of chief medical officer to Dr. Schaeffer of Berlin, *oberstabsarzt* in the Prussian army.

UNIVERSITY COLLEGE, BRISTOL: THE LATE DR. LONG FOX.—The fifth annual "Long Fox" lecture will be delivered on Nov. 5th, at 4.30 P.M., in the Medical Library, University College, Bristol, by Mr. J. Herbert Parsons, the subject being "Metastatic Inflammation of the Eye." Mr. F. Richardson Cross will preside.

A LADY WORKHOUSE MEDICAL OFFICER.—Mr. James Taylor Hyatt, who has been medical officer of the Shepton Mallet (Somerset) Workhouse for the past 18 years, having recently resigned, the local board of guardians has appointed his daughter, Miss Annie Wainwright Hyatt, M.B., B.S. Lond., to the post.

DONATIONS AND BEQUESTS.—Miss Catherine Elizabeth Bayly, of 29, Waterloo-place, Dublin, who died on August 26th last leaving personal estate valued at £4327, bequeathed £1000 to the Rotunda Hospital, Dublin; £1000 to the Adelaide Hospital, Dublin; and £500 to the Hospital for Incurables, Dublin.—By the will of the late Mr. John Briscoe, F.R.C.S. Eng., of Oxford, the Radcliffe Infirmary and County Hospital, Oxford, will benefit by a net sum of about £60,000.

THE WINSLEY SANATORIUM.—At a meeting of the medical board of this institution held on Oct. 22nd Dr. Leonard Crossley was appointed resident medical officer in place of Dr. A. Lewthwaite, resigned. Dr. Crossley at the time of his election was acting as locum-tenent at the Royal National Hospital for Consumption, Ventnor. He had previously held the appointments of house physician at the City of London Hospital for Diseases of the Chest, senior resident medical officer at the Royal National Hospital for Consumption, Ventnor, and medical superintendent of the National Sanatorium, Benenden.

MEDICAL SERVICE AT ST. PAUL'S CATHEDRAL.—The annual service for the medical profession was held this year as usual at St. Paul's Cathedral on Oct. 20th. The Guild of St. Luke, which was the first to organise this service, made all the necessary arrangements. A large number of the profession was present, many of them wearing their robes. The Society of Apothecaries and the Cutlers' Company also sent representatives. The music was well rendered by a choir under the direction of Mr. Alfred Redhead, the organist of St. Augustine's, Kilburn, and the sermon was preached by the Rev. Canon Duckworth, D.D., M.V.O., subdean of Westminster.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 6, Catherine-street, Strand, London, W.C., on Oct. 16th. There were present: Dr. F. de Havilland Hall (in the chair), Mr. J. Brindley James, Dr. W. G. Dickinson, Dr. M. Greenwood, Dr. W. Knowsley Sibley, Dr. St. Clair B. Shadwell, Mr. F. S. Edwards, Dr. W. A. Dingle, Mr. J. F. Colyer, Mr. Frank Barnes (Birmingham), Mr. Edward Bartlett, and Dr. J. B. Ball. The list of sickness claims is still rather long but for some time past the number of these has been dropping and there is now each month a substantial margin in favour of the society. As the business is now in its twenty-fifth year the age of some of those who first joined it is in many cases greater than 65 years. During the year between £500 and £600 have been paid as cash bonus to those who have reached this age and the letters received show that this method of allotting the surplus is very much appreciated.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Police Forces (Weekly Rest Day) Bill.

Dr. J. FLETCHER LITTLE, the medical officer of health of Harrow, gave evidence on Oct. 21st before a Select Committee of the House of Commons, which is considering a Bill to insure a weekly day of rest for policemen. Speaking from experience gained as a divisional surgeon Dr. LITTLE explained to the committee the nervous strain placed upon a policeman by the discharge of his duties, particularly at night, and strongly insisted that on physical grounds a day of rest should be given to him every week.

The Housing and Town Planning Bill.

On Tuesday, Oct. 27th, the Standing Committee of the House of Commons charged with the consideration of the Housing and Town Planning Bill passed the clauses relating to the duty of the local authority as to closing dwelling houses unfit for human habitation, and to its power to issue a demolition order. Very little change was introduced into the text of these two clauses. The rate of progress made with this Bill has been accelerated, and on Tuesday no less than five pages containing 13 clauses were dealt with. A considerable portion still remains to be dealt with before the part relating to county medical officers is reached.

Tuberculosis Prevention (Ireland) Bill.

A considerable amount of objection was raised to the terms of the Tuberculosis Prevention (Ireland) Bill during the second sitting of the Standing Committee of the House of Commons on Wednesday, Oct. 28th. There were two main points of objection raised. One section of Members took exception to the powers proposed to be given to the Local Government Board to prescribe the circumstances under which the notification of tuberculosis should be made. Some of the representatives of Irish constituencies also advanced arguments against laying the expenses of carrying out the Bill on the rates and called on the Government to give a subsidy from the Imperial Exchequer. The progress made with the Bill was accordingly very slow and the first subsection of Clause 1 had not been disposed of at the adjournment. Two modifications of the clause have been definitely promised by the representatives of the Irish office. Mr. BIRRELL has placed an amendment on the notice paper to provide that the Order of the Local Government Board will be made "after consulting, or offering to consult, with the Irish Branch of the General Council of Medical Education and Registration of the United Kingdom." Mr. T. W. RUSSELL has indicated that the Government will accept an amendment now standing in the name of Sir WILLIAM COLLINS to the effect that the Order of the Board shall apply only to "such forms of tuberculosis as, by reason of infective discharges, are liable to communicate the disease."

HOUSE OF COMMONS.

WEDNESDAY, OCT. 21ST.

The Nervous Exhaustion of Witnesses.

Sir EDWARD SASSOON asked the Secretary of State for the Home Department whether his attention had been called to cases of witnesses (especially of the female sex) suffering from extreme nervous exhaustion after standing a considerable time at the bar; and whether he would issue an order giving witnesses and prisoners the option of being seated during cross-examination.—Mr. GLADSTONE replied: I have no authority to issue any directions on the subject, which is one for the discretion of the court, and I have reason to believe that permission for a witness to be seated is invariably granted if applied for.

The Royal Commission on Vivisection.

Sir GEORGE KEKEWICH asked the Secretary of State for the Home Department whether his attention had been called to the evidence of Surgeon-Colonel Lawrie before the Royal Commission on Vivisection with reference to a vivisection performed by Dr. Gaskell, now a member of the Royal Commission; and whether, in consequence of that evidence, he would move or advise the removal of Dr. Gaskell from the Royal Commission which was now engaged in considering its report.—Mr. GLADSTONE answered: The answer to the first part of the question is in the affirmative. The answer to the second is that I see no grounds for taking any such action as is suggested.

Mr. CATHCART WASON asked the right honourable gentleman whether, in view of the evidence before the Royal Commission on Vivisection that the object of the operation performed by Dr. Gaskell was to enable a respirable anæsthetic to be administered and regulated, he would undertake that in cases where anæsthetics were only partially administered experiments would be confined to such animals as guinea-pigs and absolutely forbidden on domestic animals.—Mr. GLADSTONE said in reply: My honourable friend is, I think, under a misapprehension. In all experiments on living animals which are calculated to cause pain, except those of the nature of inoculations, it is the established practice that the animal must during the whole of the operative procedure be under the influence of an anæsthetic of sufficient power to prevent the animal feeling pain. This applies to all animals whether domestic or not.

Motor Accidents in London.

Mr. MARKHAM asked the Secretary of State for the Home Department to state the total number of deaths and accidents to persons caused by motor-propelled vehicles in the metropolitan police area during the first eight or nine months of this year.—Mr. GLADSTONE answered: The number of accidents during the months January to

September, 1908, inclusive, in which personal injury resulted was 2945. In 105 cases the injuries proved fatal.

The Weir Hospital Charity and Streatham.

Sir HENRY KIMBER asked the honourable Member for the Elland division, as representing the Charity Commissioners, whether the Charity Commissioners, in framing the scheme for the Weir Hospital Charity, assumed or alleged that the directions of the testator were incapable of accomplishment—namely, the establishment within the parish of Streatham of a dispensary, cottage hospital, convalescent home, or other medical charity with the two freehold properties and the large fund left by the testator for that purpose for the benefit of the inhabitants of that parish and neighbourhood; whether by the terms of the will income only was to be used for the establishment and maintenance of the charity; if so, on what grounds the Commissioners justified their propsal to appropriate £50,000 of the capital and the income of the whole residue of the trust funds to another purpose in another parish; upon what authority, statutory or otherwise, did the Charity Commissioners rely in applying for the benefit of a hospital in another parish and borough, viz., that of Battersea, a fund which was left for the expressed purpose of establishing a charity in, and for the parish of, Streatham, in the borough of Wandsworth, which parish had a population of 101,628 and an area of four and a half square miles.—Mr. TREVELYAN said in answer: I must premise my reply by saying that as I am no longer responsible for the conduct of the affairs of the Charity Commission I should not be justified in entering into any discussion on the merits of the proposed scheme of the Commission. The final form will have to be settled apart from my opinion. It is proposed by the scheme that a dispensary and also a nurses' home should be established in the parish of Streatham in the two freehold houses left by the testator, but the Charity Commissioners were of opinion that the whole of the charity funds could not properly be applied for these two purposes. It appeared to them that after providing for these purposes some other mode ought to be found for the application of the residue of the funds, whether by way of capital or income, and they considered that the best means of attaining the testator's object of benefiting Streatham and the neighbourhood is that for which provision is made by the scheme. It appears to the Commissioners that the benefits reserved for Streatham and the neighbourhood under the scheme are considerably greater than the charity funds alone could provide for.

Sir HENRY KIMBER further asked the honourable gentleman whether he would state the grounds upon which the Commissioners refused to publish the report of the public inquiry respecting the Weir Hospital charity or communicate it to the inhabitants of Streatham, who were the beneficiaries under the testator's will, and whether they would lay it and the evidence and correspondence before the House, or supply a copy to the Member representing the inhabitants of Streatham; and whether the Charity Commissioners had received any, and what, protests, objections, petitions, or letters against the published draft scheme.—Mr. TREVELYAN replied: The report made to the Commissioners by their assistant Commissioner of what took place at the inquiry is confidential, and it is not the practice of the Commissioners to communicate such reports in the way desired by the honourable Member. The Commissioners have received numerous objections and suggestions with regard to the published draft scheme, all of which will receive their careful consideration.

Sir HENRY KIMBER also asked whether the sum of £5000 which was paid out of the capital of the Benjamin Weir Trust Fund to the Bolingbroke Hospital in Battersea, before any scheme had been published by the Commissioners, was made to secure two legacies from other testators, and, if so whether he would state what those legacies were, by whom they were left, and the conditions upon which they were bequeathed; whether the authorities of the King Edward's Hospital Fund who were alleged to have advised union with Bolingbroke Hospital knew at the time of giving that advice of the purposes for which, and the terms upon which, the testator had left his property, and of the directions which he had given for the application of the funds of the charity; and whether they never expressed any opinion that the wishes of the testator could or could not be carried out in the manner expressed in his will, and never advised that the fund was insufficient for that purpose.—Mr. TREVELYAN answered: The advance of £5000 was made to secure two promised donations of £5000 and £900 respectively, of which the trustees informed the Commissioners. The authorities of King Edward's Hospital Fund were consulted only as to the best method of employing a gift of about £100,000 for the purposes of a medical charity for the benefit of Streatham and neighbourhood. The determination of the legal questions arising in the case is a matter for which the Charity Commissioners accept responsibility.

THURSDAY, OCT. 22ND.

Sleeping Sickness in Nyassaland.

Mr. REES asked the Under Secretary of State for the Colonies whether, with reference to the first report of the research expedition sent out to Central Africa by the Liverpool School of Tropical Medicine to the effect that the glossina palpalis was not the only carrier of sleeping sickness, and to the fact that glossina morsitans was found all over Nyassaland, the Government was taking special steps to prevent the further spread of sleeping sickness southwards to Nyassaland.—Colonel SEELY replied: I regret to say that a telegram has been recently received from the Governor of Nyassaland reporting that sleeping sickness has appeared in that protectorate. Steps are being taken to deal with the matter, the importance of which has been fully realised both by the Secretary of State and the Governor.

The Upkeep of Sanatoriums.

Mr. HIGHAM asked the President of the Local Government Board whether he would issue a circular to local authorities, especially boroughs, pointing out the wisdom of contributing to the upkeep of consumptive sanatoriums, either by annual contribution or by a sum per capita, according to the number of sufferers from tuberculosis the authority might send to the sanatorium for treatment.—Mr. BURNS answered: I propose to issue an Order to provide for the notification to medical officers of health of pauper cases of pulmonary tuberculosis, and I also propose, when sending copies of the Order to the sanitary authorities, to draw their attention to the administrative action which can be taken in connexion with such matters as that referred to in the question. This will, I hope, meet the object which my honourable friend has in view.

The Milk Bill.

In answer to Mr. COURTHOPE, Mr. BURNS stated that he could not at present fix a date for the introduction of the Milk Bill.

Reported Cure for Cholera.

Major ANSTRUTHER-GRAY asked the Under Secretary of State for India whether his attention had been called to the reported cure for cholera now in use at Shanghai with good results; and whether he would cause inquiries to be made with a view to coping with this disease in India.—Mr. BUCHANAN said in reply: The Secretary of State has no particulars as to the remedial treatment of cholera reported to be adopted in Shanghai, but will cause inquiries to be made.

The Ventilation of the House of Commons.

Sir PHILIP MAGNUS asked the Prime Minister whether, in view of the possible recurrence of the influenza epidemic during the approaching winter months, he would reconsider the question of the adjournment of the House for a half hour, between the hours of 7 and 9, in order that the windows might be opened for the admission of fresh air and the better ventilation of the Chamber.—Mr. HARCOURT (First Commissioner of Works) replied: Without expressing any opinion as to the advisability of the suggestion in connexion with the possibility of a recurrence of the influenza epidemic, I would point out that, as explained on many previous occasions, the system of mechanical ventilation does not lend itself to the opening of windows. A much better result can be obtained by running the appliances at full speed during the adjournment, but even that requires to be very judiciously done in the winter season as otherwise it might be very difficult to catch up the lowered temperature which would necessarily result in severe weather. The matter of an adjournment or a recurrence to the old informal break in the sitting is one which the Prime Minister can only consider if he were convinced that it represented a great weight of opinion in all quarters of the House.

Sir PHILIP MAGNUS also asked the First Commissioner of Works whether he could now see his way to take any steps to improve the ventilation of the House by the admission of fresh air through other channels than the floor, over which hundreds of persons trod during the day, bringing with them from the roads particles of organic matter, which, by the system now in operation, were forced into the air and distributed throughout the Chamber.—Mr. HARCOURT furnished the following written answer: It has already been shown by the inquiry before the Select Committee upon the subject, that nothing short of a radical reconstruction of the Chamber would permit of an alteration of the system of admitting fresh air at the floor level. It should, however, be borne in mind that, in addition to scrupulous cleanliness, any small extent of vitiation in connexion with the present system is probably neutralised by the rapid changes of air.

Medical Certificates for Absent School Children.

Mr. ARNOLD HERBERT asked the President of the Board of Education whether he could see his way by regulation to authorise the acceptance of a certificate by a district nurse as to the inability of a child to attend school in country districts owing to the difficulty often experienced of obtaining the certificate of a medical practitioner.—Mr. RUNCIMAN (by written answer) replied: The matter is not dealt with by the Board's regulations. It is for the local education authority in each area to say, in the first instance, what evidence they will accept under the law of school attendance as sufficient to excuse a child from attending school, and in cases of prosecution for non-attendance it is for the magistrates to decide as to the sufficiency of the evidence and excuse.

The Sick and Wounded at Casa Blanca.

Sir GILBERT PARKER asked the Secretary of State for War whether the War Office had in its possession full information as to the mechanical means, such as motor ambulances, which might have been used for transporting the French sick and wounded during the campaigning at Casa Blanca; and, if not, whether he would instruct the military attaché at Paris to furnish a report.—Mr. HALDANE (by written answer) replied: From information received it would appear that no mechanical transport was used for the carriage of the French sick and wounded during the campaigning at Casa Blanca. Has the honourable Member any information to the contrary effect? If so, would he furnish me with it.

Sir GILBERT PARKER also asked the right honourable gentleman whether the War Office had in its possession full particulars as to the methods adopted for treating cases of enteric fever in the French field hospitals at Casa Blanca; and, if not, whether the War Office would think it expedient to instruct the military attaché at Paris to procure full particulars.—Mr. HALDANE replied: I am informed that enteric fever in the hospital at Casa Blanca was treated on the Brandt or cold-water system.

Sir GILBERT PARKER further asked whether the War Office had in its possession full particulars as to the methods adopted in the Spanish Army for housing the forces debarked at Casa Blanca, the system of constructing the papier-maché huts, field-kitchen, and hospital, and the cost of construction; and, if not, whether the War Office would think it expedient to instruct the military attaché in Madrid to procure full particulars.—Mr. HALDANE furnished the following written answer: The War Office is in possession of information regarding the types of huts used for housing the Spanish troops at Casa Blanca. No detailed information has been received regarding the Spanish field-kitchen or hospital. The latter is a hutment similar to those used as barracks for the troops. The field-kitchens are understood to be of the ordinary type and it has not been considered necessary to call on our military attaché for a special report.

MONDAY, OCT. 26TH.

The Blind in Ireland.

Mr. SLOAN asked the Chief Secretary to the Lord Lieutenant of Ireland whether he intended to introduce legislation dealing with the blind in Ireland, and if so, when.—Mr. BIRRELL replied (by written answer): I presume that the honourable Member refers to legislation on the lines of the Irish Education (Afflicted Children) Bill which was introduced by my predecessor two years ago. I should be very glad to introduce a Bill on the subject if I had any assurance that it would meet with general approval.

TUESDAY, OCT. 27TH.

The Disposal of Sewage.

In reply to Mr. A. LEE, Mr. BURNS said: The reports of the Royal

Commission on Sewage Disposal are receiving my consideration with a view to legislation, but I do not think it will be practicable to introduce a Bill on the subject during the present session.

Vaccination Cases at Cirencester.

Mr. LUPTON asked the President of the Local Government Board with reference to the three cases of injury resulting from vaccination performed in Cirencester, on which the Local Government Board medical inspector reported, whether the chancres produced by vaccination were those of simulating syphilis; and whether the Local Government Board would send the reports to Mr. Jonathan Hutchinson, F.R.C.S., for his opinion.—Mr. BURNS replied: The three cases referred to were all vaccinated with calf lymph and I am advised that it is impossible to communicate syphilis by means of calf-lymph. The medical inspector, who, however, saw the children some months after the vaccination, states that the scars on the sore places bore no resemblance to chancres, and from the date of the origin of the complication it is clear that it was caused by accidental contamination of the sore places which took place a considerable time after vaccination had been performed. I see no sufficient reason for adopting the course suggested in the last part of the question.

Mr. Haffkine and the Government of India.

Sir WILLIAM COLLINS asked the Under Secretary of State for India whether Mr. Haffkine had been reinstated in employment under the Government of India; and whether his duties were restricted exclusively to research work.—Mr. BUCHANAN replied (by written answer): The answer to both parts of the question is in the affirmative.

The Plague and Rats.

Sir WILLIAM COLLINS asked the Under Secretary of State for India whether his attention had been called to the observations of Lieutenant-Colonel A. Buchanan, I.M.S., on the propagatian of plague in India by means of rats, and to his conclusion that the best way to prevent plague in India was by keeping cats; and whether the Government of India had formed any opinion as to the soundness of this conclusion.—Mr. BUCHANAN furnished the following written reply: The Secretary of State is aware that Lieutenant-Colonel Buchanan, in letters appearing in the Indian newspapers, has recommended the public to set greater store on cats as the simplest way of keeping down rats. In urging this Colonel Buchanan is not opposed to other methods of prevention. The Secretary of State is not aware that the Government of India has formed any opinion on the subject.

WEDNESDAY, OCT. 28TH.

A Vivisection Experiment.

Mr. GEORGE GREENWOOD asked the Secretary of State for the Home Department whether he was aware that the certificate under which the experiment on two dogs was performed, referred to by Colonel Laurie in his evidence before the Royal Commission on Vivisection, provided only that the animals should be placed under an anæsthetic of sufficient power to prevent their feeling pain during the operative procedure; that the experimenters retired during the experiment for an interval of half-an-hour, leaving the vivisected dogs fixed to the operating table; that during the interval no operative procedures were performed upon the animals, and that consequently the certificate issued by the Home Office afforded no protection to the dogs from consciousness and sensibility to pain during the interval; and whether, in these circumstances, he would amend the wording of his certificate so as to afford a real and complete protection from suffering to vivisected animals during the whole of all experiments upon them calculated to cause pain.—Mr. GLADSTONE replied: The two experiments in question were performed under licence alone and not under certificate. The animals were therefore required to be kept during the whole of the experiment under the influence of an anæsthetic of sufficient power to prevent their feeling pain. It is stated by Dr. Shore, who performed the experiments, that this was done.

TUBERCULOSIS PREVENTION (IRELAND) BILL.

The Tuberculosis Prevention (Ireland) Bill came before a Standing Committee of the House of Commons on Wednesday, Oct. 21st. It is described as a "Bill to prevent the spread and provide for the treatment of tuberculosis and for other purposes therewith," and is in the charge of Mr. BIRRELL, the Chief Secretary to the Lord Lieutenant of Ireland. Mr. EUGENE WASON was in the chair. Clause 1 of the Bill deals with the notification of tuberculosis and the first subsection is in the following terms: "If any medical practitioner attending on any person becomes aware that that person is suffering from tuberculosis of any form, or at any stage and in any circumstances prescribed by an Order of the Local Government Board under this section, the medical practitioner shall forthwith send to the medical officer of health of the district in which the patient is a certificate in the prescribed form and containing the prescribed particulars."

Mr. COOPER, as an amendment, proposed to recast the subsection in the following terms: "If any county council or county borough, by resolution passed at a meeting of that authority, of which 14 days' notice before the meeting at which such resolution is proposed shall be given to every member of that authority, order that any medical practitioner attending a person residing in the administrative area of the county or borough becomes aware such person is suffering from pulmonary tuberculosis, the medical practitioner shall send forthwith to the sanitary authority of the district in which the person resides a certificate stating the full name and age and sex of the person, the postal address of the house, and the form of the disease from which, in the opinion of the medical practitioner, the person is suffering; any such Order may be permanent or temporary, and if temporary the period for which it is to continue in force shall not be less than a period of three years. Such Order shall not be of any validity until it has been approved by the Local Government Board, and when it is so approved the council shall give public notice thereof by advertisement in at least one local newspaper, or otherwise in such manner as the council may think sufficient for giving information to all persons interested; and they shall send a copy of such Order to each legally qualified medical practitioner, whom, after inquiry, they ascertain to be residing or practising in the area of the administrative county or borough. The Order shall come into operation at such date not earlier than one week after the publication of the first advertisement of the approved Order." The honourable Member went on to state that there were four or five factors besides infection which accounted for the fact that tuberculosis was so rife in Ireland. There were such factors as overcrowding, bad ventilation, insanitary conditions, bad feeding, and excessive drinking. If this legislation was to be carried out it ought to be carried out by the county councils. The county councils were as capable in Ireland as in England, and if they thought that any good would be done by the notification proposed in the Bill they would be the first to put the Bill in operation.

Mr. BIRRELL (Chief Secretary to the Lord Lieutenant of Ireland) said that the Committee had to consider the ravages in Ireland of the bacillus of tuberculosis and the best way of dealing with this terrible disease. Whilst in England and in Scotland the disease was showing some symptoms of diminution, he regretted to say that in Ireland it was very much on the increase. All through Europe and the United States there existed in the minds of medical men who had made examinations of the sputum of persons affected by this disease the opinion that tuberculosis was an infectious disease. It was well known that the bacillus of tuberculosis was in the sputum of affected persons and it was the undoubted opinion that the disease did become infectious through the contaminating influences of the sputum. Sputum and the milk of cows were great means of spreading it, although everyone agreed that such a thing as bad feeding was a factor in the disease. Now they were dealing with the fact that there were in Ireland an enormous number of persons who were infected, that the disease spread from them to others, and that their presence in their houses was dangerous to the people concerned with them. Therefore he should have thought that honourable Members should be all agreed that the time had come to deal with this terrible disease in Ireland according to the most advanced views. In New York some years ago legislation on the same lines as he was now proposing was carried. Now it was not only accepted by the medical profession, but the people also had been so alive to the utility of sending the sputum of their friends affected to the medical officer that the whole thing was in full force. The State of New York had passed a similar Act, which proceeded upon the assumption that tuberculosis was an infectious and communicable disease. The amendment which the honourable Member proposed was not a working amendment and it was impossible for the Government to accept it. The local bodies in Ireland had enough to do with their own affairs. This was an important scientific matter and it was only to be determined by those who had the means of making bacterial investigations and therefore it should lie only with those in a responsible department. He hoped that the Committee would not reconstruct the whole proposals of the Bill by imposing upon county councils the task for which, with great respect to them, they had not the full qualifications.

Mr. NANNETTI said that he regretted the position he had to take up with reference to this Bill. Everyone was aware that tuberculosis in Ireland was on the increase. However, he was afraid that this Bill partook something of the nature of panic legislation and he did not agree with a good many of the provisions of it. He thought something must be done for the purpose of meeting the evil, but the Government had begun in the wrong way. It would not cure tuberculosis by the notification clause or by the erection of sanatoriums. It must get at the primary causes. He thought that the Government should have made this a national question and have not thrown the cost upon already over-burdened ratepayers. Until the Government was prepared to deal with the cases of persons living in insanitary areas such as existed in the City of Dublin, he did not think that it would be able to deal effectively with the matter. By the Bill the proposal was to make it compulsory for all cases of tuberculosis, even the very slightest cases, to be notified——

Mr. BIRRELL: "Of any form, or at any stage, and in any circumstance prescribed by an Order of the Local Government Board."

Mr. NANNETTI: That is just the point. I do not agree with leaving all these things to the Local Government Board. The honourable Member continued that where there were already public health authorities these authorities ought to deal with the matter. Many workmen would be scheduled as affected by the disease. They would be made probably in many cases to go into a sanatorium. Who was to pay for that treatment? The ratepayers. However, in his opinion the Government ought to pay this. Another effect of the compulsory notification would be that working men would be marked as affected with tuberculosis by their fellows. Whilst he objected to the terms of the Bill he must add that he was in sympathy with the object it sought to further.

Lord BALCARRES said that although he could not support the amendment he agreed with a good deal of the criticism. The serious nature of the situation was admitted, but was the Bill going to improve it? He was more than doubtful whether the proposals of the Government did not go so far as to be in the nature of panic legislation which might throw back the cause of tuberculosis prevention for years and years. The Chief Secretary spoke of the unanimity of the doctors. That was not the interpretation of their opinion which he had reached from a perusal of the literature which had been placed in his hands. The Irish doctors, who had passed resolutions on this subject, said that the corollary of compulsory notification was compulsory treatment. That would cost an enormous sum. Without compulsory treatment compulsory notification was useless. The doctors said that without money they could not do effective work. It was not only seven or eight weeks in a sanatorium that had to be considered for the sufferer from tuberculosis. Experience in Scotland went to show that the six or eight weeks in a sanatorium were preliminary to subsequent treatment, and the supervision of a trained man was required after the patient had left the sanatorium. Besides, the cost of 2½ guineas a week in a sanatorium was prohibitive for an artisan and a working man. That was a difficulty which struck the Irish doctors. It was a practical difficulty and traversed the whole Bill to such an extent that nobody was justified in saying that medical opinion as a whole in Ireland supported the Bill in the terms in which it came before the Committee. He pointed out that New York started with a voluntary Bill. It was a fatal blot that the Government started on this legislation in Ireland with a compulsory Bill. In Scotland a start had been made with voluntary notification. It was proved to people that spitting was a cause of spreading tuberculosis and notification was adopted by assent and not by force. Did the Chief Secretary dare to make war on tuberculosis in a really effective way? He did not think the right honourable gentleman would dare. The only really effective way was to fine a man a shilling every time he spat in the street and half a crown every time he spat in a railway train, a tramcar, or in a public building.

Mr. BIRRELL: There is a strong feeling against spitting in Ireland.

Lord BALCARRES: But the right honourable gentleman has not dared to do what I suggest.

Mr. BIRRELL: I quite agree that spitting ought to be put down.

Mr. SEAVERNS pointed out that there was a penalty imposed on spitting in New York.

Lord BALCARRES said that the penalty on spitting was not strictly enforced in New York. Nor was it enforced in Sydney where there was also a penalty. Did honourable Members think that people were going to call in a doctor if they knew that the doctor was under a statutory obligation to notify that there was a small permanent affection of a tuberculous nature? The effect of that would be that doctors would not be called in at the moment when it was important that they should be. The noble lord went on to quote from a document issued by the Local Government Board on the subject of tuberculosis and pointed out that there were passages in it such as that a consumptive mother ought not to nurse her children. Well, in poor homes who was to look after the children if not the mother? Then it went on to state that there should be no marriage between consumptives.

Mr. BIRRELL: That is not in the Bill.

Lord BALCARRES: There is no use trying to rush this Bill. This Bill cannot be rushed through this Committee of the House of Commons. The document which he was quoting represented the attitude of the Local Government Board which had to work the Bill and would draw up a scheme for dealing with tuberculosis. He was convinced that they were going beyond public opinion in this matter.

Mr. C. C. CRAIG expressed the opinion that public opinion was not ripe for the drastic proposals of the Bill. Everyone who knew anything of this subject agreed that the notification must be accompanied by the provision of hospitals. The Bill did nothing of the sort. Even notification, without further steps being taken, would inflict very great hardship on a very great number of people. The Committee had had no information advanced to it as to what benefit was to accrue from notification.

The amendment was negatived without a division.

Mr. C. C. CRAIG moved an amendment to omit the word "shall" and substitute "may" for it. The effect of the amendment was to leave it optional to the medical practitioner to notify the medical officer of health of cases of tuberculosis. The honourable Member said that in view of the discussion which had taken place on the last amendment he need not detain the Committee with any observations.

Mr. BIRRELL declined to accept the amendment. However, he said that there were points in the previous discussion to which he would like to allude. There was the question of isolating the affected workman from his fellows, and he was afraid that honourable Members must harden their hearts a little in this matter. Precautions must be taken. The noble lord had read a tract issued by the authority of the Local Government Board, and, like all tracts, medical or political or religious, it was open to a little criticism. He dared to say that it might have erred in overstating its case, but if one was writing to exhort people to do their duty one was apt to overstate a case. However, he thought that the regulations of the Local Government Board would err on the side of timidity and by a desire to deal only with the cases in an advanced stage. The medical view was unanimous to the extent that there must be compulsory notification. Honourable Members went on to say that places to treat tuberculous patients ought to be erected. The Government was not prepared to go to that length itself. However, the Bill would allow county councils to erect sanatoriums. If these did not exist all they could do was to instruct the people how best to live in their own homes. They could not do all things at once. It would be a very good thing if there were the unlimited means at the disposal of the Government to start fighting tuberculosis in such a thorough fashion. In the meantime the Government wished to take advantage of the feeling which existed in Ireland that this disease was infectious, although its final sources might be bad air, bad housing, and alcoholic drinks. It was carried by means which medical men knew. The Government wished to keep it within limits. Compulsory notification would let the doctors know where the thing was. They would be able to remove those affected, and if not they could give them advice which would, if not absolutely destroy the danger, at all events reduce it to a considerable extent. The Bill was really built round the principle of compulsory notification.

Mr. NANNETTI feared that the Bill would mark out men affected with tuberculosis as persons to be shunned. Surely Parliament might trust medical men to notify advanced cases of the disease to the public health authority.

Mr. COOPER urged the Government to deal with the provision of better sanitary conditions. The tuberculosis bacillus only acted when it found favourable ground.

Lord BALCARRES said that in Glasgow, Edinburgh, and Manchester, notification had at first proceeded on voluntary lines. He thought that at first notification should be voluntary in Ireland.

Mr. T. W. RUSSELL (speaking on behalf of the Irish Office) said that the principal object of the Local Government Board in issuing regulations would be to make it compulsory to notify such cases of tuberculosis as could be helped. Only cases of open tuberculosis of the lung would at first be notified and then only when the patients were living under conditions dangerous to other people. The Local Government Board would have no objections to consult a committee of medical men in this matter.

Mr. C. C. CRAIG thought that the amendment would in no way detract from the usefulness of the Bill.

Lord BALCARRES criticised the statement of Mr. Russell. Evidently the early stage of the disease was not going to be dealt with under the regulations proposed by the Local Government Board. The right honourable gentleman said that only cases that could be "helped" would be notified. "Helped" by whom?

Sir JOHN BATTY TUKE supported the amendment. Opinion was not quite so strong on notification as it had been some time ago. He would therefore urge the Government to proceed with caution in this matter. By the adoption of the amendment the Government would gain experience in the working of voluntary notification which might be used later.

Mr. BIRRELL considered that in too many cases the adoption of voluntary notification would render it most unlikely that the doctor in attendance would make the notification which the Government thought necessary. That was really the practical reason which made him find it impossible to accept the amendment. He wished to be able to frame regulations distinguishing between town and country. He wished to adopt rules and regulations because he was told that he must go slowly. The Government, however, thought that Ireland should be ready to use the experience of other countries. They had seen what had taken place in Scotland. They knew the benefits which had resulted there. They were encouraged by the attitude of the Irish people towards tuberculosis, and they would not exercise the provision in the clause so as to excite public opinion against them.

The amendment was rejected by 13 votes to 9.

The Committee adjourned for a week.

Clause 1 was still under consideration. No change had been as yet made in its terms.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B., ET FILS, 19, Rue Hautefeuille, Paris.

Bibliothèque de Thérapeutique. Publiée sous la Direction de A. Gilbert et P. Carnot. Médicaments Microbiens. Bactériothérapie, Vaccination, Sérothérapie. Par les Docteurs Metchnikoff, Sacquépée, Remlinger, Louis Martin, Vaillard, Dopter, Besredka, Wassermann, Leber, Dujardin-Beaumetz, Salimbeni, Calmette. Price Fr. 8.

DOIN, OCTAVE, ET FILS, 8, Place de l'Odéon, Paris.

L'Étude Expérimentale de la Rage. Par le Dr. Auguste Marie, Chef de Laboratoire à l'Institut Pasteur. Price Fr. 5.

Les Dysenteries. Étude Bactériologique. Par M. Ch. Dopter, Médecin-Major de 2e Classe, Professeur Agrégé au Val-de-Grâce. Price Fr. 5.

ERNEST-GOOSSENS, F., 49, Rue Lebeau, Bruxelles. (DOIN, O., 8, Place de l'Odéon, Paris.)

Atlas de Radiologie Normale. Par MM. les Docteurs L. Hauchamps, Directeur du Laboratoire de Radiologie des Hôpitaux de Bruxelles, J. Klynens, Radiologiste à Anvers, E. Mahaux, Docteur spécial de l'Université de Bruxelles. Price Fr. 20.

KEGAN PAUL, TRENCH, TRÜBNER, AND CO., LIMITED, Dryden House, 43, Gerrard-street, London, W.

The Story of a Lifetime. By Lady Priestley, Lady of Grace of the Order of St. John of Jerusalem. Price 12s. 6d. net.

LECLERC, ALFRED, 19, Rue Monsieur-le-Prince, Paris.

Technique Précise de Radiothérapie et de Radioscopie. (Instrumentation Pratique). Par le Dr. Paul Vaudet de la Faculté de Médecine de Paris. Préface de M. E. Gaucher. Deuxième Édition. Price Fr. 6.

LEHMANN, J. F., Heustrasse, 20, München.

Lehmann's Medizinische Handatlanten. Band VI. Atlas der Syphilis und der venerischen Krankheiten mit einem Grundriss der Pathologie und Therapie derselben. Von Hofrat Professor Dr. Franz Mracek in Wien. Zweite vermehrte und verbesserte Auflage. Mit 81 farbigen Tafeln nach Original-Aquarellen von Maler A. Schmitson und 26 schwarzen Abbildungen. Price M. 16.

Atlas und Grundriss der Gerichtlichen Medizin. Unter Benutzung von E. v. Hofmann's Atlas der gerichtlichen Medizin. Herausgegeben von Dr. Georg Puppe, Professor der gerichtlichen Medizin in Königsberg i. Pr. Two volumes. Price M. 20.

LIVINGSTONE, E. AND S., 15, Teviot-place, Edinburgh.

The Student's Handbook of Physiology. By the late Arthur Clarkson, M.B., C.M. Ed., Formerly Demonstrator of Physiology, Owen's College Manchester, and Yorkshire College, Leeds, and David A. Farquharson, M.B., C.M. Ed., F.F.P. & S. Glas., Professor of Physiology, St. Mungo's College, Glasgow. Price 12s. net.

MACMILLAN COMPANY, The, New York.

Neurological and Mental Diagnosis. A Manual of Methods. By L. Pierce Clark, M.D., Senior Attending Physician, Hospital for Nervous Diseases, New York, and A. Ross Diefendorf, M.D., Lecturer in Psychiatry in Yale University. Price 5s. net.

The Principles of Anthropology and Sociology in Their Relations to Criminal Procedure. By Maurice Parmelee, M.A. (The Citizen's Library of Economics, Politics, and Sociology. Edited by Richard T. Ely, Ph.D., LL.D., Professor of Political Economy, University of Wisconsin. Price $1.25 net, each). Price 5s. net.

MASSON ET CIE, 120, Boulevard Saint-Germain, Paris.

Médecine Opératoire des Voies Urinaires, Anatomie Normale et Anatomie Pathologique Chirurgicale. Par J. Albarran, Professeur de Clinique des Maladies des Voies urinaires à la Faculté de Médecine de Paris, Chirurgien de l'Hôpital Necker. Price Fr. 35.

SAUNDERS (W. B.) COMPANY, Philadelphia and London.

Gynecology and Abdominal Surgery. Edited by Howard A. Kelly, M.D., F.R.C.S. Hon. Edin., Professor of Gynecologic Surgery at the Johns Hopkins University, Gynecologist to the Johns Hopkins Hospital, Baltimore, and Charles P. Noble, M.D., S.D., Clinical Professor of Gynecology at the Woman's Medical College, Philadelphia, Surgeon in Chief, Kensington Hospital for Women, Philadelphia. Illustrated by Hermann Becker, Max Brödel and others. Volume II. Price 35s. net.

Pulsating Exophthalmos. By George E. de Schweinitz, M.D., Professor of Ophthalmology in the University of Pennsylvania, and Thomas B. Holloway, M.D., Instructor in Ophthalmology in the University of Pennsylvania. Price 10s. net.

Obstetric and Gynecologic Nursing. By Edward P. Davis, A.M., M.D., Professor of Obstetrics in the Jefferson Medical College, Philadelphia, Obstetrician to the Jefferson Hospital. Third Edition, thoroughly revised. Price 8s. net.

Diseases of the Skin and the Eruptive Fevers. By Jay Frank Schamberg, A.B., M.D., Professor of Dermatology and Infectious Eruptive Diseases in the Philadelphia Polyclinic and College for Graduates in Medicine. Price 13s. net.

SPRINGER, JULIUS, Monbijouplatz, 3, Berlin, N.24.

Der Theoretische Nährwert des Alkohols. Vortrag gehalten in den Wissenschaftlichen Alkoholkursen in Berlin am 24. April, 1908. Von Professor Dr. Max Kassowitz in Wien. Price M.1.

WITHERBY AND Co., 326, High Holborn, London, W.C.

The Changeling. What a Boy Whose Eyes had been opened saw of the Real Life of the Wild Creatures round his Home. By Sir Digby Pigott, K.B., Member of the British Ornithologists' Union. With many Illustrations by the Author and Charles Tresidder. Price 2s. 6d. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

CROSSLEY, LEONARD, M.D., Ch.B. Edin., has been appointed Resident Medical Officer at the Winsley Sanatorium for Consumptives, near Bath.

CUFFE, M. J., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Swords District of the county of Dublin.

DUFF, DONALD, F.R.C.S. Edin., F.F.P.S. Glasg., has been appointed to the Notman Chair of Physiology in St. Mungo's College, Glasgow.

HANCOCK, EDWARD DAWBNEY, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Surgeon to the Bath Eye Infirmary.

HYATT, ANNIE WAINWRIGHT, M.B., B.S. Lond., has been appointed Medical Officer to the Workhouse by the Shepton Mallet (Somerset) Board of Guardians.

MCCALLUM, J. D., M.B., B.S. Glasg., has been appointed Medical Officer for the Northern Division of South Knapdale Parish, Lochgilphead.

PRICE, JOHN THOMAS, M.D., B.Ch. Dub., has been appointed District Medical Officer by the Llandilofawr Board of Guardians.

SCOTT, T. GRAHAM, L.R.C.P. Lond., M.R.C.S., has been re-appointed Joint House Anæsthetist at the Royal Dental Hospital.

SUMMERHAYES, J. O., M.R.C.S., L.R.C.P., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Thame District of the county of Oxford.

WARNER, H. F., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Haywards Heath District of the county of Sussex.

WEBBER, H. W., M.S. Lond., has been appointed Surgeon to the South Devon and East Cornwall Hospital, Plymouth.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHTON-UNDER-LYNE DISTRICT INFIRMARY.—Junior House Surgeon. Salary at rate of £75 per annum, with board, residence, washing, &c.

AYR DISTRICT ASYLUM.—Junior Assistant Medical Officer. Salary £120 per annum, with board, lodging, and attendance.

BARNSTAPLE, DEVON, NORTH DEVON INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

BOLINGBROKE HOSPITAL.—House Surgeon for six months. Salary at rate of £75 per annum, with board, lodging, and washing.

BLACKPOOL EDUCATION COMMITTEE.—School Medical Officer (female). Salary £200 per annum.

BRISTOL EYE HOSPITAL.—House Surgeon. Salary £70 per annum, with board and residence.

CANCER HOSPITAL, Fulham-road, London, S.W.—Assistant Pathologist. Salary £250 per annum. Also Medical Registrar. Salary £100 per annum.

CAPETOWN, SOMERSET HOSPITAL.—House Surgeon. Salary £200 per annum, with rations and quarters.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

CHESTER GENERAL INFIRMARY.—House Physician. Salary £90 per annum, with residence and maintenance.

COLCHESTER, BOROUGH OF.—Assistant Medical Officer of Health and School Medical Officer (female). Salary £200 per annum.

DERBY EDUCATION COMMITTEE.—School Medical Officer. Salary £250 per annum.

DREADNOUGHT HOSPITAL, Greenwich.—Assistant Physician. Also Dental Surgeon.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon for six months. Salary £25, with board, residence, and laundry. Also Assistant Physician. Also Second Medical Officer for six months. Salary at rate of £40 per annum, with luncheon and tea.

GLASGOW UNIVERSITY.—Examiners in Materia Medica and Therapeutics, Pathology, Medicine (Systematic and Clinical), and Surgery (Systematic and Clinical).

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Salary £25. Also Assistant Resident Medical Officer. Salary £100 per annum, with board and residence.

ISLE OF MAN ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, quarters, and washing.

KENSINGTON, ROYAL BOROUGH OF.—Medical Officer of Health. Salary £600 per annum, rising to £900.

KENT EDUCATION COMMITTEE.—Two Medical Inspectors of School-children. Salary £250 per annum, rising to £300, and travelling expenses. Also Medical Inspectors in various Sanitary Districts.

KING'S COLLEGE (UNIVERSITY OF LONDON).—Sambrooke Medical Registrar.

LANCASHIRE EDUCATION COMMITTEE.—Two School Medical Inspectors. Salaries £250 per annum, increasing to £400, with reasonable expenses.

LANCASTER, ROYAL LANCASTER INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, attendance, and washing.

LEEDS GENERAL INFIRMARY.—House Physician, Ophthalmic House Surgeon, and Resident Medical Officer for the Ida and Robert Arthington Hospitals, all for six months. Board, washing, and laundry provided, and for the latter appointment a salary of £30.

LEICESTERSHIRE EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £300 per annum, with travelling expenses.

LONDON COUNTY ASYLUM, Horton, Epsom, Surrey.—Junior Assistant Medical Officer, unmarried. Salary £160 per annum, with board, apartments, and washing.

LONDON, UNIVERSITY OF.—Examiners for the Faculty of Medicine.

LUTON, BOROUGH OF.—Medical Officer of Health. Salary £400 per annum.

MARGATE, ROYAL SEA BATHING HOSPITAL.—Resident Surgeon, as Junior and Senior. Salary at rate of £80 and £120 per annum, with board and residence.

MENSTON, NEAR LEEDS, WEST RIDING ASYLUM.—Fourth Assistant Medical Officer. Salary £150 per annum, with board and apartments.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Grafton-street, Fitzroy-square, W.—Two Anæsthetists.

MIDDLESBROUGH, NORTH ORMESBY HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with board, apartments, washing, and attendance.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Senior House Surgeon for six months. Salary at rate of £100 per annum, with board, attendance, and washing.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Surgeon Laryngologist. Also Clinical Pathologist. Salary 100 guineas per annum.

NEWARK-ON-TRENT HOSPITAL AND DISPENSARY.—Resident Medical Officer, unmarried. Salary £80 per annum, with board, lodging, and laundry.

NORFOLK EDUCATION COMMITTEE.—Two Assistant Medical Officers. Salary £250 per annum and necessary travelling expenses.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant Surgeon.

ROYAL EAR HOSPITAL, Soho.—Honorary Assistant Anæsthetist.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Assistant Anæsthetists (females).

ST. BARTHOLOMEW'S HOSPITAL.—Lecturer on Mental Diseases.

ST. GEORGE'S UNION INFIRMARY, Fulham-road, West Brompton, S.W.—Second Assistant Medical Officer. Salary £120 per annum, with board, residence, and washing.

ST. THOMAS'S HOSPITAL.—Demonstrator in Physiology. Salary £100 per annum.

SHEFFIELD, UNIVERSITY OF.—Demonstrator in Physiology. Salary £150 per annum.

TIVERTON, DEVONSHIRE, INFIRMARY AND DISPENSARY.—House Surgeon and Dispenser. Salary £30 per annum and all found.

WIMBLEDON EDUCATION DEPARTMENT COMMITTEE.—School Medical Officer (female). Salary £250 per annum.

WORCESTER COUNTY AND CITY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140 per annum, with board, lodging, attendance, and laundry.

YORK COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Rochford, in the county of Essex; at Swinton, in the county of York; and at Eastbourne, in the county of Sussex.

Births, Marriages, and Deaths.

BIRTHS.

GARDNER.—On the 12th inst., at the Manse, Acharacle, Ardgour, Argyllshire, the wife of William Gardner, L.R.C.P. Lond., M.R.C.S. Eng., formerly of Nunney, Somerset, a son.

ROBINSON.—On Oct. 18th, at Mutley Park-terrace, Plymouth, the wife of Gerald Robinson, F.R.C.S., of a son.

THORNELY.—On Oct. 27th, at Epsom, the wife of William Thornely, M.B., of a daughter.

MARRIAGES.

REES—STOCK.—On the 22nd inst., at St. Peter's, Sark, by the Rev. L. N. Seichan, A. E. Carey Rees, M.B. Edin., to "Nellie," elder daughter of the late Mr. J. and Mrs. Stock, of Dixcart, Sark.

DEATHS.

ADAM.—On Oct. 25th, at Malling Place, West Malling, Kent, James Adam, M.D., aged 74 years.

HOAR.—On Oct. 22nd, at The Grove, Robertsbridge, Sussex, Amy, wife of Charles Hoar, M.B., C.M., and only daughter of the late Augustus Waller, M.D., F.R.S.

MORGAN.—On the 18th inst., at Glenside, Pontypool Road, Monmouthshire, George Morgan, M.D., aged 77 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

MEDICAL TRAVELLERS.

MEDICAL men are not, as a rule, great travellers. Their work is continuous and precludes holidays sufficiently lengthy for them to undertake peregrinations into unknown regions. And yet amongst celebrated travellers not a few were, and some happily still are, members of the medical profession. Bruce, Mungo Park, Livingstone, Schweinfurth, Nachtigal, Junker, Schnitzer (Emin Pasha), and Nansen all studied medicine before they became famous in the field of geographical discovery, while at the present day their compeers Sven Hedin, Stein, and Bullock-Workman are still engaged in the same fascinating but arduous pursuit. During his travels in Tibet, which have extended over two years, Dr. Sven Hedin has not suffered from illness for a single day or been obliged to make use of any medicine whatever. The distance which he travelled, for the most part in Western Tibet, is estimated at 4000 miles, but as the country is four times the size of France there is still, he says, plenty of room for future explorers. With regard to food, Dr. Sven Hedin made no special arrangements but lived on whatever sustenance was procurable locally. He did not smoke during his travels and drank no liquor stronger than tea. The explorer was at Simla when the last Indian mail left and delivered a three hours lecture to an audience which included the Viceroy and all the notables in residence. In his discourse he summarised the results of his journeying and exhibited some admirable maps and drawings. At the conclusion of the lecture Lord Minto said that the story which they had listened to was full of adventure and incident, revealing facts of the highest geographical value. The lecturer had taken his listeners into his confidence, which he (Lord Minto) was sure would be respected. Dr. Sven Hedin proposed to stay at Simla for ten days, when he would proceed directly to Sweden. Afterwards it was his intention to visit London where he had already been invited to deliver lectures before the Royal Geographical Society. It was also his intention to publish a book dealing with his discoveries. The latest news regarding Dr. Stein, dated Khotan, July 15th, stated that he hoped to reach Leh at the end of September and Kashmir before the close of October. Apparently Dr. Stein's expedition has been a most successful one. He mentions sculptures and paintings which he found in the temples of Karashahr on the north-eastern edge of the Takla Makan desert, and also a great collection of documents on wood and paper and a number of scripts, mainly Indian, Chinese, and Tibetan, and none of later date than the eighth or ninth century A.D. Although successful Dr. Stein's journey was most arduous. He has, however, succeeded in bringing with him 50 pony loads of antiquarian treasures. Dr. and Mrs. Bullock-Workman, accompanied by Dr. C. Calciati and Mr. M. Koncza, together with a Swiss guide and some Italian porters, have successfully accomplished the survey of the great Hispar Glacier in Hunza-Nagar. The party remained five weeks on the Hispar, camping during most of the time in the snow at altitudes ranging from 16,000 to 19,500 feet. Although the chief objects of the expedition were glacier study and mapping, several new peaks and passes were climbed, notably one peak of about 22,000 feet. This ascent was accomplished by Mrs. Bullock-Workman with the guide and two porters.

RE GOITRE OR BRONCHOCELE.

To the Editor of THE LANCET.

SIR,—One of my patients, a lady, married, under 30 years of age, has suffered for about two years from a bronchocele, which continues to increase and is now of such a size as to be easily noticeable. It is accompanied by disturbance of heart and circulation, palpitation, thrill at apex beat, giddiness, &c., but no exophthalmos. All the usual remedies have been fairly tried short of removal of the gland and change of residence. The family live in a pleasant suburb in Kent, about ten miles directly south of London Bridge. It lies low though said to be very healthy, and the death-rate is one of the lowest around London. But the subsoil is clay with about nine inches of gravel or sand over it. They have decided to change their residence and I should feel greatly obliged if any of your readers could indicate to me the part near London, within 20 miles of the Bank of England, where there are convenient moderate-sized houses with good train service to the City that would be most beneficial for such a person to live, or is there any one place in that radius better than another and any reasons for selection of the spot named?

I am, Sir, yours faithfully,

Oct. 21st, 1908. KENT.

FREEMAN AND WALLACE.

FOR some years past a firm of quacks trading under the name of Freeman and Wallace, upon whom we animadverted in strong terms in our issue of March 23rd, 1901, have been duping people in Australia. We see by the *Sydney Morning Herald* of Sept. 17th, 1908, that Freeman and Wallace were sued for negligence by a patient before Mr. Justice Cohen and a jury of four in the No. 1 Jury Court, Sydney, on Sept. 16th. The jury brought in a verdict of £450 damages for the plaintiff and added a rider to the following effect:—"The jury are of very strong opinion that measures should be taken by legislation or otherwise to suppress all such pernicious institutions as the one in question," the one in question being the medical institute run by Freeman and Wallace. We are very glad to see that Messrs. Freeman and Wallace have at length been mulcted in a fairly large sum, though this sum is probably nothing to the amount which they have obtained from their dupes for some years past. Freeman and Wallace would never have attained the amount of business which they have attained were it not for the aid given to them by advertisements in the press, but we in this portion of the British Empire cannot cast a stone at other portions of the Empire when we find, as we do in the daily press, advertisements of alleged cures for cancer and other diseases trading upon the readers' ignorance of such forms of energy as magnetism, electricity, and radio-activity. These advertisements are, we have no hesitation in saying, most improper productions. We see, by the way, that Judge Cohen, in talking of the methods adopted by the Freeman and Wallace Institute, said of those concerned in its management: "For cruel cunning, unmeasured deceit, and hypocritical pretence I doubt whether the courts of this colony disclose a case to which these epithets more justly apply."

LYNN THOMAS AND SKYRME FUND.

THE following subscriptions were received from Sept. 17th to Oct. 22nd:—

	£	s.	d.
Wellington (N.Z.) Division, B.M.A., per J. R. Purdy	10	0	0
Perth Branch, B.M.A., per John Hume	2	2	0
British Guiana Branch, B.M.A., per K. S. Wise (second subscription)—viz., £1 from A. T. Ozzurd, £1 from K. S. Wise	2	0	0
E. F. Martin, Weston-super-Mare	1	1	0
Victorian Branch, B.M.A., per C. H. Mollison—viz., £1 from G. A. Syme, 10s. from J. Shanasy	1	10	0
West Norfolk Division, B.M.A., per J. L. Forrest	1	10	0
Gloucester Branch, B.M.A., per D. E. Finlay (second subscription)	0	15	0

DER DOLMETSCHER AM KRANKENBETTE.

WHAT is a "*Dolmetscher*"? A *Dolmetsch* is a dragoman, and, by extension of meaning, a "conversations-lexicon." From a German *Dolmetscher*, designed for use by physicians in the Fatherland when engaged with English patients (those lucrative windfalls), we cull the following interesting phonetic excerpts: Häw ju e'ni erö'pschön on e'ni pahrt ow juhr bo'di? ai häw ä rasch on dh bräst. häs dh uum bihn skrehpd? häw ju kohld fiht? ai häw aluehs kohld fiht. ju mösst ushr a pesseri. mai uatör iss blödi. ai fihl äs if ai mösst mehk uatör ewri fjuh minits. ai uisch tu häw ä tuhth put in in front. pliha to rimuhw dhiss stömp. tel mi dh truth äs tu mai kondischön. I söffför könsidörööbl pehn on gohing tu sstuhl. häw ju eksspihrensed eni naschea? ai beg ow ju tu put ä mahrk on mai grehw. ju nihd not bih ät al önihsi, ju uil bih uel luhkd aftör. Ssailenss! if ju plihs. "Und so weiter," as they say in Germany. The Dolmetsch is a most praiseworthy erudite gentleman. He leaves no subject untouched and there is no subject that he does not set in a new light. It is to be regretted that Mark Twain did not meet him long ago.

A SERUM FOR TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—Could any of your readers give me some information with regard to Professor Lannelongue's recently discovered serum for the treatment of tuberculosis? A notice appeared in the papers a few days ago that a number of successful cases had been reported to the French Academy of Science. Could they inform me whether the serum can be purchased, and if so where? I should be much obliged if they can give me this and any other information about this serum.

I am, Sir, yours faithfully,

Oct. 18th, 1908. INQUIRER.

THE PATHOGENESIS OF TABES DORSALIS.

IN THE LANCET of Sept. 19th, p. 875, we published a paper under the above heading by Dr. Tom A. Williams, who asks us to point out that the paper was extremely condensed and adds that in case any of our readers wish to refer to the data from which the conclusions were arrived at they will find them in an expanded version of the paper which was published in the August number of the *American Journal of the Medical Sciences*.

DYED MILK.

THE Southern Counties Dairies Co., Limited, was fined £2 and £1 0s. 6d. costs at the Eastbourne borough bench on Oct. 19th for selling milk which was not of the nature, substance, and quality demanded on Sept. 7th. The sample taken by an inspector was found by the analyst to be diluted with at least 2 per cent. of added water. The consignment had been warranted from the farmer to the retailer, but the defence could not plead a warranty as a servant of the company at Eastbourne admitted having interfered with the milk by putting colouring in. This practice of adding artificial colouring is all too common and should be stopped. Annatto is the dye usually employed and, although harmless, is not justified, for more often than not it is used to give milk diluted with water an appearance of "richness." The excuse generally given for the use of colour is that the public expect milk to be always of the same tint.

A PROBLEM IN VENTILATION.

To the Editor of THE LANCET.

SIR,—I should be glad if any of your readers could tell me of some simple means of keeping the air in a bedroom dry at night-time. I live on a marshy piece of ground, and at all times the air, in and out of the house, is loaded with moisture, but at night-time there is nearly always a bank of fog some 30 or 40 feet high over the ground, and the inhalation of this in our sleep quite prostrates us. Of course, it would be better still if we could keep the air of the whole house dry, but I am afraid this would be impracticable, and I should be thankful for the smaller mercy. I am, Sir, yours faithfully,

Oct. 20th, 1908. L.R.C.P.

DUPLICATE COPIES OF THE LANCET.

To the Editor of THE LANCET.

SIR,—I have a number of duplicate copies of THE LANCET, one or more of which I would be glad to send to any of your readers wishing to complete a volume. The dates of issue are as follows:—1895, July 6th; 1896, Jan. 25th, June 20th, and Sept. 12th; 1897, May 15th; 1898, March 5th; 1899, Jan. 28th; 1901, Feb. 2nd and Nov. 9th; 1902, May 17th and Nov. 1st and 29th; 1903, Oct. 24th; 1904, Jan. 23rd and Oct. 8th; 1905, May 6th and Dec. 23rd; and 1907, January complete, Feb. 2nd and 9th, and Nov. 2nd. I am, Sir, yours faithfully,

Castle Cooke, Ballynafeigh, Belfast, Oct. 7th, 1908. W. L. STOREY.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—J. Gray Duncanson, H. Charles Cameron): at 4.30 P.M.

Papers:

Prof. W. E. Dixon: The Treatment of Toxæmias.

Dr. Arthur F. Hertz, Mr. F. Cook, and Mr. E. G. Schlesinger: The Action of Saline Purgatives.

PATHOLOGICAL SECTION (Hon. Secretaries—Leonard S. Dudgeon, O. Grünbaum): at 8.30 P.M.

Meeting at the Royal Army Medical College, Millbank.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—George C. Cathcart, Atwood Thorne): at 5 P.M.

Cases and Specimens:

Mr. C. A. Parker: Malignant Disease of Nose with Secondary Involvement of Cheek.

Sir Felix Semon, K.C.V.O.: (1) Epithelioma of Left Vocal Cord; (2) Case for Diagnosis.

Mr. Herbert Tilley: Interarytenoid and Subglottic Infiltration necessitating Tracheotomy.

Dr. Dundas Grant: (1) Two Cases of Extrinsic Epithelioma of Larynx; (2) Thyro-lingual Sinus in a Boy aged 14.

Dr. StClair Thomson: Laryngeal Vertigo in a Case of Early Tabes.

Dr. Peter Abercrombie: Perforation of Palate after Scarlatina.

Dr. Pegler: Primary Tuberculous Granuloma of Triangular Cartilage.

Mr. H. S. Barwell: Congenital Occlusion of Right Posterior Naris.

Mr. J. Gay French: Extensive Fracture of the Walls of the Frontal Sinuses.

Dr. Dundas Grant and Dr. Dan McKenzie: Fistulous Thyroglossal Duct.

Dr. Dan McKenzie: Tuberculous Disease of the Larynx.

Mr. Stuart-Low: (1) Recurring Epistaxis; (2) Rhinoscleroma in a Woman.

Dr. Lambert Lack: Lupus Erythematosus of Face and Palate.

Dr. Jobson Horne: Intrinsic Laryngeal Growth in a woman aged 64.

Dr. G. Cathcart: Deflected Septum; Complete Occlusion of Right Nostril.

Mr. Arthur Evans: Carcinomatous Growth of Arytenoid Cartilage.

Dr. Watson Williams: Models of Operation for Pansinusitis.

SECTION OF ANÆSTHETICS (Hon. Secretaries—Llewelyn Powell, R. W. Collum): at 8.30 P.M.

Paper:

Mr. Richard Gill: Chloroform Action.

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

RÖNTGEN SOCIETY, 20, Hanover-square, W.

THURSDAY.—8.15 P.M., Mr. W. D. Butcher: The Amsterdam Congress (with demonstrations and lantern illustrations). (Presidential Address.)

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersmith-road, W.

FRIDAY.—8 to 9 P.M., Cases will be shown, followed by Meeting.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East.

TUESDAY.—5 P.M., Dr. W. Pasteur: Massive Collapse of the Lung. (Bradshawe Lecture.)

THURSDAY.—5 P.M., Dr. L. Guthrie: The History of Neurology. (Fitz-Patrick Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. M. H. MacLeod: Clinique (Skin). 5.15 P.M., Lecture:—Dr. A. Edmunds: The Surgical Treatment of Tuberculous Glands.

TUESDAY.—4 P.M., Dr. W. Harris: Clinique (Medical) 5.15 P.M., Lecture:—Mr. V. Cargill: Recent Advances in Ophthalmology.

WEDNESDAY.—4 P.M., Mr. J. Clarke: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. G. L. Cheatle: Chronic Mastitis and its Treatment.

THURSDAY.—4 P.M., Mr. Hutchinson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. F. J. Smith: Some Acute Illnesses and their Management.

FRIDAY.—4 P.M., Mr. C. A. Parker: Clinique (Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Mr. Etherington-Smith: Demonstration of Surgical Cases. 12 noon, Dr. Low: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. Bidwell: Pulmonary Embolism after Laparotomy.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Moullin: Gynæcological Cases.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. K. Scott: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Medicine.

THURSDAY.—10 A.M., Mr. Etherington-Smith: Demonstration on Surgical Case. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Mr. Dunn: Cases of Eye Diseases.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Abraham: Cases of Skin Diseases.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. K. Scott: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. J. H. Evans). 2.30 P.M., Medical Out-patient (Dr. Whipham); Nose, Throat, and Ear (Mr. Carson); X Rays. 4.30 P.M., Medical In-patient Clinic (Dr. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. Auld). 2.30 P.M., Surgical Operations (Mr. Carson). Clinics:—Surgical (Mr. Edmunds); Gynæcological (Dr. Giles).

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. Whipham); Skin (Dr. Meachen); Eye (Mr. Brooks). 4.30 P.M., Dr. S. J. Gilfillan: Demonstration of Cases of Mental Disease at the Colney Hatch Asylum.

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. Giles). Clinics:—Medical Out-patient (Dr. Whiting); Surgical (Mr. Carson); X Rays. 3 P.M., Medical In-patient (Dr. Chappel).

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. J. H. Evans). 2.30 P.M., Surgical Operations (Mr. Edmunds). Clinics:—Medical Out-patient (Dr. Auld); Eye (Mr. Brooks). 3 P.M., Medical In-patient Clinic (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Sir Dyce Duckworth: Medicine. 3.15 P.M., Mr. Turner: Surgery. 4 P.M., Mr. Lawrence: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 3.15 P.M., Special Lecture:—Mr. Turner: Some Points in Intracranial Surgery.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. R. Wells: Gout.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 3.30 P.M., Special Lecture:—Mr. Cargill: The Examination of the Field of Vision and its Importance.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Seborrhœa and Psoriasis dealt with as Stages of the same Dermatitis in Symptoms, Diagnosis, and Treatment.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Dr. J. Taylor: Syphilitic Diseases of the Spinal Cord.

FRIDAY.—3.30 P.M., Dr. A. Turner: Neuritis.

HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, Welbeck-street, W.

THURSDAY.—5 P.M., Dr. P. Stewart: Myopathy (with lantern demonstration).

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

THURSDAYS.—4 P.M., Lecture:—Mr. Waugh: The Diagnosis and Treatment of Mastoid Disease.

UNIVERSITY COLLEGE, BRISTOL, Medical Library, University College, Tyndall's Park, Clifton.

THURSDAY.—4.30 P.M., Dr. J. H. Parsons: Metastatic Inflammation of the Eye. (Long Fox Lecture.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

TUESDAY (3rd).—London (2) P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Ophthalmic (2 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (4th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.).

THURSDAY (5th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.).

FRIDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (7th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 29th, 1908.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 23	30·39	E.	...	65	52	42	42	45	Cloudy
,, 24	30·17	N.	...	73	47	43	43	45	Cloudy
,, 25	30·17	N.	...	70	51	36	37	40	Fine
,, 26	29·96	N.E.	0·07	55	52	40	51	51	Raining
,, 27	29·93	E.	0·09	55	52	46	45	46	Raining
,, 28	30·09	S.	0·38	82	62	43	52	52	Overcast
,, 29	30·23	S.W.	...	90	64	52	54	55	Fine

During the week marked copies of the following newspapers have been received:—*Sheffield Telegraph, Cornishman, Ulster Herald, Glasgow Herald, Belfast News, Edinburgh Evening News, Belfast News Letter, Burton Chronicle, Nottingham Guardian, Aberdeen Free Press, Morning Advertiser, Daily Telegraph, Globe, Derby Express, Wolverhampton Express, Freeman's Journal (Dublin), Glasgow News, Bradford Observer, &c.*

Communications, Letters, &c., have been received from—

A.—Monsieur J. Astiers, Asnières; Messrs. Armour and Co., Lond.; Ambrose Co., Lond.; Messrs. C. G. Adams and Co., Lond.; Dr. C. Arday, Szabadszallas; Messrs. R. Anderson and Co., Lond.; Sir Clifford Allbutt, Cambridge; Aberdeen, Medical Officer of Health of; *L'Argus de la Presse*, Paris, Director of.

B.—Mr. J. W. Benson, Lond.; Dr. H. J. D. Birkett, Southsea; Dr. F. C. Brodie, Ollerton; Dr. C. Ballabene, Rome; Mr. A. B. Brockway, Brisbane; Mr. W. F. Brook, Swansea; Dr. G. C. Belcher, Birmingham; Mr. James Boyton, Lond.; Dr. R. Burnet, Bury; Mr. D. T. Bostel, Lond.; Dr. H. S. Birkett, Montreal; Mr. D. H. Bernard, Grassendale; Mr. W. H. Brooks, Leicester; Messrs. Blundell and Rigby, Lond.; Nurse Breen, Malmesbury.

C.—Mr. A. Couchman, Lond.; Coventry and Warwickshire Hospital, Coventry, Secretary of; Chester Infirmary, Secretary of; Cambridgeshire County Council, Cambridge, Finance Clerk of; Mr. J. Crake, Hull; Messrs. J. and A. Churchill, Lond.; Continental Tyre and Rubber Co., Lond.; C. P. W.; Cumberland County Council, Carlisle, Clerk to the; C. W. M.; Messrs. Condy and Mitchell, Lond.; F. W. Clarke, Chorlton-cum-Hardy; Mr. A. F. Comyn, Lond.; Dr. L. Crossley, Winsley.

D.—Dr. E. H. Douty, Cannes; Messrs. Doulton and Co., Lond.; Department of Public Health and Charities, Philadelphia, Director of; Dulwich Debating Society, Hon. Secretary of; Dispenser, Clapton; Dr. Morgan Dockrell, Lond.

E.—Dr. W. B. Evans, Stanley; Messrs. Elliott, Son, and Boyton, Lond.

F.—Dr. A. H. Frere, Norwich; Mr. Frederick R. Farmer, Gloucester; Dr. Arthur Foxwell, Birmingham.

G.—Mr. P. L. Giuseppi, Lond.; Mr. W. Gardner, Acharacle; General Apothecaries Co., Lond., Secretary of; Sir James Grant, Ottawa; Dr. W. Gordon, Exeter; Mr. J. Hartley Gates, Four Oaks; Great Yarmouth Hospital, Secretary of.

H.—Dr. L. Howe, Buffalo, U.S.A.; Mr. H. Hadley, Lond.; Messrs. C. J. Hewlett and Son, Lond.; Messrs. Hyam and Co., Lond.; Messrs. Halsby and Co, Lond.; H. D.; Hospital for Sick Children, Lond., Secretary of.

I.—Incorporated Institute of Hygiene, Lond., Secretary of; Messrs. Ingram and Royle, Lond.; Hon. Mrs. Susan Ives, Davos Platz.

J.—Mr. J. Jowett, Bolton-le-Sands; Judge Co., New York, President of; J. F. H.; J. W.

K.—Dr. S. J. J. Kirby, Lowestoft; Messrs. Kutnow and Co., Lond.; Mr. L. J. Kidd, Lond.; Kent Education Committee, Lond., Secretary of; Mr. W. B. Kebble, Lond.

L.—Dr. Sidney C. Lawrence, Lond.; Messrs. Lee and Nightingale, Liverpool; Leeds General Infirmary, Manager of; Leicester Infirmary, Chairman and Board of Governors of; Leicestershire County Council Education Committee, Leicester, Director of; *Le Ferment*, Paris, Manager of.

M.—Mr. W. Martindale, Lond.; Mr. A. Ernest Maylard, Glasgow; Mr. E. P. Milner, Middlesbrough; Messrs. Maple and Co., Lond.; Messrs. McDougall, Manchester; Manchester Clinical Society, Hon. Librarian and Editor of; Mellin's Food, Lond., Manager of; Captain R. McCarrison, I.M.S., Guildford; Messrs. Morice, Nouland and Co., Cognac; Messrs. Macmillan and Co., Lond.; Miol Manufacturing Co., Lond.; Thomas McLean's Galleries, Lond.; Dr. E. E. Maples, Lond.

N.—Dr. David Newman, Glasgow; Messrs. Neyroud and Sons, Lond.; Newark Hospital, Secretary of; National Food Reform Association, Lond., Committee of; North Devon Infirmary, Barnstaple, Secretary of; Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.

O.—Dr. H. O'Neill, Belfast; The Offord Patent Hygienic Truss Co., Cambridge, Managing Director of.

P.—Mr. M. J. Pierce, Kilronan; Dr. Frederick Pearse, Calcutta; Dr. R. H. Paramore, Lond.; Dr. J. J. Perkins, Lond.; Mr. John M. Parsons, Maryport; Peckham House, Lond., Secretary of; Dr. W. Pasteur, Lond.; Mr. F. J. Pearson, Owston Ferry; Messrs. Peacock and Hadley, Lond.

R.—Mr. L. Rousseau, Quebec; Royal College of Physicians, Lond., Secretary of; Royal Ear Hospital, Lond., Secretary of; Mr. H. Betham Robinson, Lond.; Dr. David Ranken, Newcastle-on-Tyne; Mr. H. Richardson, Lond.; Messrs. Reynolds and Branson, Leeds.

S.—Dr. M. Stewart Smith, Lond.; Society of Antiquaries of London, Assistant Secretary of; Messrs. Slack and Cox, Manchester; Dr. B. H. Spilsbury, Lond.; Mr. R. S. Srivastava, Almora; Stockport Education Committee, Secretary of; Messrs. Selig, Sonnenthal and Co., Lond.; Mr. S. G. Scott, Lond.; Messrs. W. H. Smith and Son, Birmingham; Mr. Snowden, Mundesley; Dr. F. A. Swezey, Wakonda, U.S.A.; Dr. E. I. Spriggs, Lond.; Messrs. Siemens Bros. and Co., Lond.; Sanitary Inspectors Examination Board, Lond., Hon. Secretary of; Dr. C. Slater, Lond.; Mr. Arthur Shillitoe, Lond.; Mr. James Scott, Lond.; Dr. Theodore Shennan, Edinburgh; Mr. H. B. Statter, Great Chart; Star Engineering Co., Wolverhampton; Scholastic, Clerical, &c., Association, Lond.

T.—Sir W. P. Treloar, Lond.; Dr. Hugh Taylor, Llandovery; Mr. H. B. Tarry, Bushey; Tiverton Infirmary, Hon. Secretary of; T. F. O. K.; T. B.

V.—Dr. F. P. Vale, Washington; Mr. J. W. Vickers, Lond.

W.—Dr. Arthur Whiting, Lond.; Dr. Edward Walker, Huddersfield; Dr. R. Weiss, Lond.; Mr. W. W. Wagstaffe, Sevenoaks; Sir A. E. Wright, Lond.; Worcester County and City Asylum, Powick, Medical Superintendent of; West London Post-Graduate College, Dean of; Mr. Frank A. Watkins, Lond.; Westminster, Medical Officer of Health of; West Riding Asylum, Menston, Clerk to the; Wimbledon, Borough of, Clerk of; Dr. Tucker Wise, Dartmouth.

Y.—York County Hospital, Secretary of; York, Medical Officer of Health of.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. Adams, Bournemouth; Ardath Tobacco Co., Lond.; Mr. G. H. Adam, West Malling; Anglo-American Pharmaceutical Co., Croydon, Managing Director of; A. E. S.; A. W.; A. F. M.; A. W. B.

B.—Mr. E. Baker, Birmingham; Dr. G. D. Barton, Weybridge; Bristol General Hospital, Secretary of; Bayer Co., Lond.; *British and Colonial Druggist*, Lond., Secretary of; Messrs. Burroughs, Wellcome, and Co., Lond.; Mr. J. Berry, Lond.; Messrs. Battley and Watts, Lond.; Mr. C. W. G. Bryan, Oxford; Mr. R. R. Bakshi, Rajkot, India; Barnsley Hall Asylum, Bromsgrove, Secretary of.

C.—Dr. J. W. Caton, Banstead; Mr. G. W. Clark, Exeter; Messrs. Cadbury Bros., Bournville; C. E. T.; College of Preceptors, Lond., Secretary of; Mr. R. A. Cameron, Cathcart; Messrs. T. Cook and Son, Lond.; Carlow District Lunatic Asylum, Clerk to the; Mr. H. S. Clogg, Lond.; C. A. J.; Mr. W. F. Cross, Lond.; Messrs. Carnrick and Co., Lond.

D.—Dr. W. G. Dunwoody, Newark; Mr. G. T. De Fraine, Aylesbury; Dr. G. B. S. Darter, Victoria West, South Africa; Derby Education Committee, Secretary of; Dr. S. J. O. Dickins, Cowfold; Messrs. Duncan, Flockhart, and Co., Edinburgh; Dorset County Asylum, Dorchester, Medical Superintendent of; Mr. H. Davies, Lond.; Dumfries and Galloway Royal Infirmary, Treasurer to the.

E.—Edwards Harlene Co., Lond.; Mr. A. R. Elliott, New York; E. K. C.

F.—Dr. C. M. Flide, Lond.; Messrs. Findlater, Mackie, Todd, and Co., Lond.

G.—Dr. J. Alison Glover, Lond.; Messrs. Gale and Co., Lond.; Messrs. Giles, Schacht, and Co., Bristol; G. W. M.; Mr. W. Hotten George, Lond.; Mr. E. Gooch, Lond.; Gateshead Education Committee, Secretary of; Sir J. Glover, Lond.

H.—Messrs. Hogg and Son, Lond.; Halifax Union, Clerk to the; Messrs. T. Holland and Son, Lond.; Mr. H. H. Howells, Newport, Monmouthshire; H. A. B.; H. A. H.

J.—J. E. B.; J. T.; J. H.

K.—Mr. W. W. King, Bath; K., Camden-road; *Knowledge and Scientific News*, Lond., Editor of.

L.—Mr. W. W. Linney, Croydon; Liverpool Royal Infirmary, Secretary of; L. H.; L. P.; Mr. T. Lord, Addlestone; L. W. H. J.; Locum, Liverpool; Leicester Infirmary, Secretary of; Mr. C. Lupton, Leeds; London Society for Promoting Christianity amongst Jews, Accountant to the.

M.—Dr. J. B. McNeill, Mallow; Dr. D. M. MacRae, Philippolis; Messrs. Manlove, Alliott, and Co., Nottingham; Messrs. F. Mundy, Gilbert, and Co., Birmingham; Messrs. Morriss and Birch, Lond.; Manhu Food Co., Liverpool; Medical, Leeds; Staff-Surgeon G. E. Macleod, R.N., Devonport; Mr. J. Murray, Lond.; Messrs. C. Mitchell and Co., Lond.; Manchester Corporation, Treasurer to the; *Midland Counties Herald*, Birmingham, Manager of; M. W. S.; Mr. J. Müller, Wigan; Dr. G. P. Meldon, Dublin; Maltine Manufacturing Co., Lond.; Mr. W. Morgan, Mansfield.

N.—North-East London Post-Graduate College, Dean of; Norfolk County Asylum, Thorpe, Clerk to the; Newcastle College of Medicine, Secretary of; Norwich Corporation, Accountant to the.

O.—Oldham Corporation, Medical Officer of Health of.

P.—Messrs. Parke, Davis, and Co., Lond.; P. N.

R.—Mr. J. W. Roberts, Thirsk; Royal Alexandra Infirmary, Paisley, Clerk to the; R. C.; Messrs. E. J. Reid and Co., Lond.; R. A. R.; R. M. H. W.; R. J. M.; Radcliffe Infirmary, Oxford, Treasurer to the; Messrs. Reynell and Son, Lond.; Royal Albert Hospital, Devonport, Secretary of.

S.—Mr. W. Somerville, Longhope; Stockport Corporation, Treasurer to the; S. S. S.; Stirling Royal Infirmary, Treasurer to the; Springfield House Asylum, Bedford, Medical Superintendent of; South Devon and East Cornwall Hospital, Plymouth, Secretary of; Southend - on - Sea Corporation, Accountant to the; Dr. F. W. Saunders, Lond.; Swiss Bank, Lond., Manager of; Dr. A. P. Sherwood, Eastbourne; *South Wales Argus*, Newport, Manager of.

T.—Mr. J. Thin, Edinburgh; Temperance Male and Female Nurses' Co-operation, Lond., Secretary of; T. S. A.; Messrs. P. W. Talbot and Co., Lond.; T. M.

V.—Mr. E. A. Victor, Lond.

W.—Rev. A. W. Watson, Churt; Dr. J. T. Wilson, Hamilton; Warneford Hospital, Oxford, Medical Superintendent of; Mr. F. S. Watson, Princes Risborough; W. B. T.; Messrs. W. Wood and Co., New York; Mr. J. H. White, Kilsheelan; Mr. A. H. Wade, Milford Haven; Mr. J. D. B. Whyte, Elveden; Staff-Surgeon H. V. Wells, R.N., Arran; W. B. K.; West Herts Infirmary, Hemel Hempstead, House Surgeon of; W. T. H.; Messrs. F. Williams and Co., Lond.; Wye House, Buxton, Medical Superintendent of; Messrs. H. Wilson and Son, Lond.

EVERY FRIDAY. **THE LANCET.** PRICE SEVENPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ...	Seven Lines and under	£0 5 0
Official and General Announcements	Ditto	0 5 0
Trade and Miscellaneous Advertisements and Situations Vacant	Ditto	0 4 6
	Every additional Line	0 0 6

Situations wanted: First 30 words, 2s. 6d.; per additional 8 words, 6d. Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.

Agent for the Advertisement Department in France—J. ASTIER, 31, Rue Bapst, Asnières, Paris.